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Printing Radio!

An audience research experiment looking for new ways of global textual services

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TABLE OF CONTENTS

ABSTRACT

The following study presents the design, conduct and conclusions of an audience research experiment that compared radio broadcasting with Twitter short text messaging. The idea behind this paper was to test a prototype for a singular news service app that imitates the microblogging technology that runs on Twitter, but to report exclusively media stories. The name of the prototype is *e-radio*, and it is based on the immediacy of short text messaging networks to spread only pure journalistic information. The goal was to obtain feedback and better understandings from the experience of qualified users in order to develop further research on this kind of textual media global services.

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This master's thesis has been done with a very personal motivation: to prove myself that I could finish it one day. And despite all the difficulties and sacrifices, I can happily say that this day has finally come. It has been a very exciting and tough journey in the last couple of years. But now I am satisfied and proud of what I could manage in a very stressing and changing period of my life. For that reason, I am grateful in several ways for those people who have encouraged me to never give up during this challenging work, and so I want to say:

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1. INTRODUCTION

In this initial chapter, the master's thesis paper will be introduced through three different headlines. In the first one, the preliminary considerations and inspirational foundations will be assessed, focusing on Twitter and its similarities with the traditional radio broadcasting to present the following work. In the second part, the research questions and hypotheses will be announced and explained. Finally, in the third headline, a brief outline of the paper can be found.

1.1 Twitter: a thesis foundation

In the era of global information, it was the arrival of Internet that changed the media forever and diversified significantly their importance and influence. At the same time the transformation and evolution of communications have modified the way that audiences relate with real life since the media are "the lens through which we experience the world and what we take to be the reality of that world" (Press and Williams 2010, 1). Journalism and the public, thus, evolve and adapt together to the net service paradigms that are quickly changing our environment.

However, the starting point for this thesis paper is not the discussion about how the media changed our communication experience after Internet arrived. Rather, the first motivation is to consider how powerful recent and bright ideas strongly based on Internet applications are now modifying the public and, as a consequence, the media too.

Each of all the countless services and technologies introduced by the Internet has contributed to improve the model of communications because the users suddenly were able to discover new ways of interaction. The different tools that have come up along the years, from chats to quality live streaming videos, have established several revolutions within the audiences as well. Anderson says that those technologies "shift the direction of communication from one-to-many broadcasting system to a many-to-many conversational system", including Twitter as an example of what he defines as one of the "new channels of distribution" (Anderson, C. W. in Mandiberg 2012, 80). It is actually the "channel" of the blue bird, the starting point for the study that is

presented in these lines. It is the inspiring core model for the audience research experiment that composes the current paper.

Twitter was created and launched by the American software developer "Jack Dorsey and associates in San Francisco in 2006" (Weller et al. 2014, x) under the original idea of creating a new free text messaging service to connect users all around the world. According to Dorsey, he wanted a "real-time, up-to-date" of user's statuses wherever they were under the form of "an idea for a frictionless service market" also "easy to implement and understand" (Dorsey 2006). In an "interview for *Los Angeles Times* published in 2009", Dorsey would give a definition of Twitter as "a new medium in itself, a public instant messaging system" (Weller et al. 2014, x). Nowadays, barely a few years after that initial plan, the company reports in its blog site that the usage of the network counts "255 million monthly active users" and "500 million tweets sent per day" in "more than 35 different languages". The growth of the idea into business is also explained by some of the company facts stated in the website: "3,000 employees in offices around the world based in cities such as London, Madrid, Berlin, Rio de Janeiro, Sydney, Tokyo or Vancouver" (Twitter 2014).

Twitter is also considered a "microblogging service" (Kwak et al. 2010, 1). The users are limited to 140 characters per message, like the standard SMS, although longer ideas can be explained with several messages interconnected. As a consequence of this double nature, Alexander Pak and Patrick Paroubek explain on the one hand that the "authors of those messages write about their life, share opinions on variety of topics and discuss current issues". On the other hand, that there is an "enormous number of text posts" that "grows every day" (Pak and Paroubek 2010, 1320).

Thus, the implications of this recent phenomenon are at the same time the motivations for this research. Microblogging services, particularly Twitter, have contributed to change the audience and the media. In the opinion of Pak and Paroubek, due to the "format of messages" and the "easy accessibility" of these "platforms", the "Internet users tend to shift from traditional communication tools (such as traditional blogs or mailing lists) to microblogging services". It means that the large number of personal comments about all kinds of topics make microblogging sites "valuable sources of people's opinions and sentiments" so "such data can be efficiently used for marketing or social studies" (Pak and Paroubek 2010, 1320).

In the current study, Twitter offers three interesting considerations that were taken into account for the design of the experiment. Firstly, it is quicker than any other traditional or social media, generating in a few seconds hundreds of mentions and opinions about relevant facts. Secondly, it keeps an almost totally open interactivity among users that favors direct and smooth contact between journalistic institutions professionals and audiences, without radical ideological or financial censorships. Finally and especially, it is all out universal. According to Twitter Inc. own numbers, the "78% of Twitter active users are on mobile" (Twitter 2014). The conclusion here is that smartphones and tablets have allowed everyone from anywhere to give live coverage of events by sharing information and multimedia materials whenever this is desired, with no restrictions, thanks to the role of the wireless personal Internet.

It can be believed, therefore, that beyond the prime conception of Twitter there is a powerful use that could be employed to renovate the functioning of modern journalism. In that sense, Twitter may be the inspiration for the development of a new app or Internet gadget that uses as well short text messages to provide quick, universal and more efficient information. Twitter technology and innovating mechanics together with a more standardized and professionalized journalistic service could mean the first step to design a true personal news channel for everybody.

Actually, "in recent years, the adoption of Twitter as a journalistic channel for the dissemination of information and the investigation of stories has gained public attention". That is, according to Neuberger, Jo Vom Hofe, and Nuernbergk, at least five different uses by journalists that can be named: to "promote their own websites", to give "real-time coverage from the scene of current news", to "interact with members of the public", to "monitor audience reactions and follow-up communication to their reports" and to "investigate stories and conduct research" (Weller et al. 2014, 346-47).

The key assumption at this point would be the immediacy achieved due to the current popularity of the network. Twitter's daily data traffic is now so incredibly huge that the updates of the users take place practically every second. This exceptional characteristic has transformed this social medium into a living source of active information. Also, it has led its texting service closer to the instant diffusion of radio broadcasted messages in a way never reached before. Suddenly, it could be argued that all these elements have managed a unique fact: to almost break the gap between the

written and the spoken word, which makes it now possible to transform the metaphor of a printed radio service into a tangible product, the background hypothesis of this work.

The prototype of that product is called *e-radio*. The *e-radio* is an advanced version of Twitter functionality combined with other multimedia elements to provide journalistic information. The aim is to set up basis for a new global textual information service – meaning different possible usages of immediate worldwide texting services for all users at any discipline. For instance, the *e-radio* could be employed either to feed new mainstream stories, to deliver quicker business customer services via chat, or to enrich live coverage and public debates about ongoing events. There are as many options as needs the society can have.

This goal is inspired by the nature of Twitter and its powerfully rising importance in modern journalism. However, the phenomenon has been barely explored yet, and more relevant information has to be obtained before moving on towards the right direction of research. For that reason, the method of analysis in this paper is a qualitative audience experiment. It was designed to look for the immediacy as the major target to achieve in order to create an *e-radio* prototype efficient enough. From that idea, the aim was first to compare radio and short text message broadcastings integrated simultaneously in the prototype. Once done, the purpose was to collect valuable opinions about both ways of spreading information in equal conditions of response. The feedbacks from the users after the *e-radio* experience are believed to shed light about how to improve the model of Twitter into a more specific news service usage. Eventually, interesting opinions can become valuable ideas to develop further investigations in that area while looking for new textual services that are more universal, professional and connected to real journalism.

1.2 Research questions and hypotheses

In the previous section of this chapter, an introductory discussion was assessed to illustrate how the microblogging services, particularly Twitter and its immediacy, represent the foundational conception of this study. Twitter is seen here as an inspiring model to develop the prototype of this experiment, which provisional name is *e-radio*,

looking for new ways of global textual information services. Now it is time to establish more specifically the research questions and the hypotheses of this work.

To begin with, one of the characteristics of new media channels such as Twitter is how "the electronic media's entire business model" is "changing" and how "no longer is the mass media the target" because "the 'pull model' game is now all about personal packaging and consumption". This fact occurs since "consumers are no longer willing to wait until dinnertime to watch the evening news" because "when someone desires to know what is happening in the world (…) they want the information now" (Orlik et al. 2007, 163). That need of instant information is another consequence of the immediacy achieved by these networks. In that sense, Twitter "brought together two sub-cultures, new media coding culture as well as radio scanner and dispatch enthusiasm" (Weller et al. 2014). This latter interesting affirmation is the cornerstone of the current research that aims to compare traditional radio broadcasting with a display of immediate short text messaging based on Twitter.

Nevertheless, there are no other studies that directly compare the differences between the medium radio and the Twitter technology regarding the creation of a new network of information broadcasting. Owing to this observation, this work aims to contribute to this fairly unexplored field of academic discussion with analysis and conclusions directly extracted from advanced consumers of that new media coding culture. These consumers are the respondents of the experiment and they have to interact with the *e-radio* prototype by dealing with two different news reception exposures given simultaneously in the form of radio broadcasting and short text messaging. As it will be explained further on in the methods chapter, these two outputs will tell the same information in content, but presenting the facts of the story in a different order. Under these equal conditions of response, the first research question of this paper is stated as it follows:

RQ1: Will the audience prefer to focus their attention on the reading offered by the e-radio prototype rather than to listen to the radio audios?

Thus, the first inquiry is to check out whether the respondents of the experiment preferred to follow the information using the upcoming text messages based on the Twitter interface. A preliminary consideration for this research is to discover if specialized users tend to follow the news using short text services instead of listening to

the radio when both options happen at the same time. Once that is determined, the second research question is stated as it follows:

RQ2: How did the audience experience the news reception exposure of the experiment and which reasons influenced the selected strategy?

The second research question is more important for the findings of the paper than the first one. The purpose here is to inquire about which way the audience makes the choice whatever it is. The *how* answered in details is the main aim of the experiment. That feedback will provide conclusions and valuable arguments in order to extract better understandings of the *e-radio* App prototype, the way it works and the way it has to be changed or redesigned. Also, the opinions of the subjects will explain the weaknesses and strengths of the *e-radio* compared directly with radio broadcastings. Only learning from the respondents about which advantages and disadvantages present the two outputs, the *e-radio* can really improve by taking the positive factors of radio emissions and upgrading its own peculiarities.

In addition, and following from the research questions, two hypotheses have been formulated. The first one that the experiment would attempt to strengthen goes as it follows:

H1: Those respondents highly familiarized with the use of Internet portable devices such as smartphones and tablets would prefer to focus their attention to the textual reporting of the experiment.

The prototype is inspired by Twitter textual messaging. Everything will be designed using the written word because the eventual purpose is to create something new in a field that can develop further research in this kind of printed information. The first hypothesis H1 considers that users who check the media through the screen of Internet portable devices will prefer to pay attention rather to the *e-radio* than to the radio when both outputs spread information at the same time.

The second hypothesis is the one that justifies the comparison between the radio broadcasting and the prototype. It is described in the following way:

H2: The audience will embrace positively the textual information output and, hence, their opinions will reinforce the e-radio project.

As will be explained in the next chapter, I suggest that there is an opportunity in the new online media market for products or ideas that introduce these concepts. The textual global services can develop new useful tools of information for many different fields and consumers in the current media environment. The experiment of this study will hopefully serve to measure the possibilities of success for a prototype in the journalistic perspective that gives basis for further research in media gratifications and user experience. So a new question arises: is it possible to imagine a new radio App or gadget that reports only with printed speech? And if yes, can we examine Twitter as that new printed radio?

1.3 Thesis outline

This master thesis is divided in four core chapters besides the abstract, the acknowledgements, the biography references, the appendices and the current one that establishes the introduction. The general working plan is described as it follows.

The second chapter presents the theoretical background after the research questions and its foundations. It is divided in three main subtitles with several sections each. Among them, the reader can find a review of some media and public opinion theories as well as the most relevant previous literature for this study concerning audience experiments, with examples of some of them and their contributions to the field of analysis. Simultaneously, there is a placement of the current work in that literature tradition and a brief explanation of the role that it plays.

The third chapter is about the research methods employed and it has six different headlines. Firstly, the chapter explores the process of preparation of the experiment and how it was designed and eventually conducted. It focuses in the initial disposition of the study in regard to the methods: kind of experiment, preliminary purposes, characteristics of the sessions, type of analysis, the justification of the chosen methods, expected data, election of the sampling, ethics involved, etc. Furthermore, the reader will find here a detailed description about the experiment design and how it was developed from a theoretical point of view. Secondly, the chapter explains the adjustments that took part during the experiment research after the first tests of the experiment. The problem-solving process is widely discussed together with the

necessary re-designs and later corrections. The considerations shape the clarity of the experiment within the scientific discussion. Finally, the chapter also relays deeply on that scientific ongoing debate with the justifications of its validity and reliability.

The fourth chapter explores the preliminary and final results of the experiment regarding the research questions, initial goals, and hypotheses of the study. In the first subtitle –4.1–, the reader can find a quantitative analysis of the data collected from the sessions to give answer to the RQ1 and test the strength of the H1. In the second epigraph –4.2–, the coding technique of the qualitative interview analysis is discussed in order to produce findings that answer the RQ2 and test the H2.

The fifth chapter presents the final conclusions of the research. It contains a summary of the implications and potential scientific relevance of the experiment results. The discussion concludes with a final reflection about the learning process achieved after the experiment experience, as well expectations about the future possibilities of similar studies in the field, and suggestions for further investigation. The aim is to summarize the features of the prototype app that would be based in the exposed case.

2. THEORETICAL FRAMEWORK

This chapter presents and explains a literature background review of relevant theories and discussions regarding the experiment of this paper. The section is divided in three separate headlines that analyze the theoretical approach followed to design and prepare the *e-radio* prototype. The first part relies on McLuhan's theory about the concept of the message and explores the characteristics of the medium in which it can be spread. The second investigates the theory of framing in relation to Lippmann's public opinion concept. Finally, the third headline discusses the uses and gratifications theory of the media and describes some relevant audience experiments in this tradition.

2.1 The written and spoken message

The concept of the message varies between the different media and it depends on features such as the source of information, the channel of distribution and the content that is sent. All these considerations have a certain and unique impact in the audiences that contribute to shape the public opinion in a way or another.

This master's thesis paper presents an audience research experiment that tests a prototype called *e-radio*. The *e-radio* at this stage spreads information using short texts and audio. Thus, the concepts of the medium and the message are absolutely relevant. In relation to that, McLuhan's ideas are considered inspirational to characterize the *e-radio* project. They were expressed before the Internet became common, but they still predicted how the Net was going to change the communications around the world. In the same way, the *e-radio* could predict a new type of communication service.

In a memorable beginning of his work *Understanding Media*, Marshall McLuhan first says that "in a culture like ours, long accustomed to splitting and dividing all things as a means of control" it should be considered that "the medium is the message". Afterwards, he explains "the personal and social consequences of any medium – that is, of any extension of ourselves – result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology" (McLuhan 1964, 7). If it is considered that global communications take part nowadays

mainly on the Internet, it is not difficult to embrace the powerful idea of the Internet itself as the key message for understanding the world.

The "medium as the message" indeed becomes an important statement related to this work. This theory helps to contextualize the main focus of analysis that pretends to be studied through the experiment research. That main focus is to compare the same message in content through two different media or ways of emission: radio broadcasting and textual information. And there are several subjects of revision here.

2.1.1 The channel of action

The first consideration in McLuhan's contribution deals with the technology and the channel of action. From an introductory point of view, the comparative analysis of both kinds of messages makes sense in the digital environment because "depending on which sense or faculty is extended technologically (…) the 'closure' or equilibrium-seeking among the other senses is fairly predictable". Meaning for example that "the effect of radio on literate or visual man was to reawaken his tribal memories" and eventually "the development of writing and the visual organization of life made possible the discovery of individualism, introspection and so on" (McLuhan 1964, 45). The Canadian professor explains that "to behold, use or perceive any extension of ourselves in technological form is necessarily to embrace it". So for instance, "to listen to radio or to read the printed page is to accept these extensions of ourselves into our personal system and to undergo the 'closure' or displacement of perception that follows automatically" (McLuhan 1964, 46).

Hence, McLuhan establishes a strong connection between the human communicative habits and the media and technologies employed for that purpose: "[new] electric technology does not need words any more than the digital computer needs numbers". Literally, the last statement describes how "electricity points the way to an extension of the process of consciousness itself, on a world scale, and without a verbalization whatever". Or in other words, the "language as the technology of human extension, whose powers of division and separation we know so well, may have been the 'Tower of Babel' by which men sought to scale the highest heavens" (McLuhan 1964, 80). It is very interesting to examine this thought not only to understand how the message is the medium employed, but also under the perspective over the years since this theory was formulated before Internet arrived.

In the middle of the sixties, McLuhan defended that "computers hold out the promise of a means code or language" and that "the computer, in short, promises by technology a Pentecostal condition of universal understanding and unity" (McLuhan 1964, 80). The experiment will provide valuable feedback about how the selected audience interacted with a prime design of a news gadget called *e-radio*. This news App runs on a computer and it aims to be featured by a "universal understanding and unity" as well as it is believed that Twitter does. That is why more than five decades after McLuhan formulated this, like if it was a premonition, the saying could have never been so interesting for this paper.

2.1.2 The speech in the type of message

The second consideration of McLuhan's contribution deals with the concept of speech. In regard to the information texts firstly, "the content of writing is speech, just as the written word is the content of print, and print is the content of the telegraph" and "for the 'message' of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs" (McLuhan 1964, 8). The Canadian professor also states "the 'content' of writing or print is speech, but the reader is almost entirely unaware either of print or of speech" (McLuhan 1964, 18). The interesting point according to his theory is how to redefine the Internet in terms of speech and eventually in terms of medium. As it will be explain later in this chapter, the Net combines all kinds of media and the diffusion of ideas goes to the audiences under any type of format, images to texts, videos or audios. It is, thus, a complex medium and also a complex speech to be discussed as a message for audiences.

Regarding the written word, first of all McLuhan says that the "[new] electric technology seems to favor the inclusive and participation of the spoken word over the specialist written word" (McLuhan 1964, 82). He also reminds that "it was not until the advent of the telegraph that messages could not travel faster than a messenger. Before this, roads and the written word were closely interrelated" (Ibid, 89). The crucial thing to consider here is that "each form of transport not only carries, but translates and transforms, the sender, the receiver, and the message". Thus, "the use of any kind of medium or extension of man alters the patterns of interdependence among people, as it alters the ratios among our senses" (Ibid, 90).

McLuhan also claims that the written word "involves all of the senses dramatically, though highly literate people tend to speak as connectedly and casually as possible" (McLuhan 1964, 77-78). Thus, there is a crucial difference between both ways of communication. For the scholar, a speaking message "does not afford the extension and amplification of the visual power needed for habits of individualism and privacy". In addition, when comparing both kind of messages, "although phonetic writing separates and extends the visual power of words, it is comparatively crude and slow" because "the written word spells out in sequence what is quick and implicit in the spoken word". McLuhan explains in that sense that "writing tends to be a kind of separate or specialist action in which there is little opportunity or call for reaction" (McLuhan 1964, 79). It is remarkable to say, "if the human ear can be compared to a radio receiver that is able to decode electromagnetic waves and recode them as sound, the human voice may be compared to the radio transmitter in being able to translate sound into electromagnetic waves" (McLuhan 1964, 80).

2.1.3 The medium as the message and redundancy

The third consideration from the theory of McLuhan is the distinction between what he calls "hot" and "cold" media. He defends that "there is basic principle that distinguishes a hot medium like radio from a cool one like the telephone" and that is that "a hot medium is one that extends one single sense in 'high definition'" or "the state of being well filled with data". For example, he understands that "speech is a cool medium of low definition, because so little is given and so much has to be filled in by the listener" whereas "on the other hand, hot media do not leave so much to be filled in or completed by the audience". Consequently, he says, "any hot medium allows of less participation than a cool one, as a lecture makes for less participation than a seminar, and a book for less than dialogue" (McLuhan 1964, 22-23). Since the *e-radio* prototype will mix radio and Twitter elements, it is going to be interesting to check from the sessions whether the prototype would be a "cold" or "hot" medium and which implications come from that.

As well, his theory of the media as the message relies in the fact, "the principal factors in media impact on exiting social forms are acceleration and disruption" where "the principle [of acceleration] applies to all media study" and "all means of interchange and of human inter association tend to improve y acceleration" so "speed, in turn,

accentuates problems of form and structure" (Ibid, 94-95), which take part of the discussion too.

In that sense, a couple of conclusions can be assumed about the written press at first. McLuhan says, "the newspaper is a hot medium" that "has to have bad news for the sake of intensity and reader participation". Additionally, "the newspaper, from its beginnings, has tended, not to the book form, but to the mosaic or participational form" together with the "speed-up of printing and news-gathering" which "has become a dominant aspect of human association; for the mosaic form means, not a detached 'point of view', but participation in process" (McLuhan 1964, 210). McLuhan also explains that the "telegraph shortened the sentence, radio shortened the news story, and TV injected the interrogative mood into journalism". Also, he reminds that "the press prefers those persons who have already been accorded some notoriety existence in movies, radio, TV, and drama" (McLuhan 1964, 215). The prototype is based on Twitter, which combines elements, mosaic and inherited from newspapers, and short instant nature characteristics from the telegraph.

Two conclusions can be theorized about the radio as a medium too. The Canadian professor highlights some characteristics. Firstly, he explains that the "radio provides a speed-up of information that also causes acceleration in other media" because it "certainly contracts the world to village size, and creates insatiable village tastes for gossip, rumor, and personal malice" (McLuhan 1964, 306). Then, "since TV, radio has turned to the individual needs of people at different times of the day, a fact that goes with the multiplicity of receiving sets in bedrooms, bathrooms, kitchens, cars, and now in pockets", which caused "different programs (…) provided for those engaged in diverse activities", or in other words, the change "to private and individual uses since TV" (McLuhan 1964, 306) and especially now with portable devices that allow users to listen to the radio everywhere. Simultaneously, "one of the many effects of television on radio has been to shift radio from an entertainment medium into a kind of nervous information system", where "news bulletins, time signals, traffic data, and, above all, weather reports now serve to enhance the native power of radio to involve all people in one another" because the radio is a "hot medium" (McLuhan 1964, 298-99).

Secondly, according to him, "radio affects most people intimately, person-to-person, offering a world of unspoken communication between writer-speaker and the

listener" and "that is the immediate aspect of radio" understood as a "private experience" (Ibid, 299). He recalls that "with radio came great changes to the press, to advertising, to drama, and to poetry" (Ibid, 303). And yet, McLuhan explains that the "only medium for which our education now offers some civil defense is the print medium" (Ibid, 305). All of that is very important for the design and motivations behind the experiment with the *e-radio* prototype, which aims to combine these powerful radio elements into the serious trustworthy speech of the written word.

Finally, there is an interesting concept for the sake of the experiment that is included in this section. This is the concept of redundancy and is defined as how "the spoken language provides more ongoing redundancy and contextualization than textual language, so the telephone is perceived as more appropriate than a letter for many social activities" (Rice et al. 1984, 59). The concept of redundancy is taken into account here regarding the differences between a hot and cold medium, and between written or spoken speech. The *e-radio* will combine all these elements together and the selected audience will choose some of them to gain understanding of the provided information. The research questions of this work inquiry which ones are preferred and aim to collect the motivations behind these decisions. Eventually, the purpose is to re-design and improve the idea of the e-radio gadget based on qualified feedbacks. It is believed that the redundancy of a message can be seen as a positive or negative factor by the respondents regarding the final version of the *e-radio*.

2.2 Framing public opinion in the Internet

It was again Marshall McLuhan who gave an excellent communication theory in order to describe how the world is constituted in the era of the Internet. In *The Global Village*, probably his most famous work, he unconsciously made a premonition of what Twitter would become decades later:

> "The speed of print data through satellite hookups, such as Associated Press Newscable, could deliver to individual users an overwhelming range of information fashioned, perhaps, to one's professional needs. The possibility of constant live information would prompt a continual update of background data on key news events. Audiences oriented to a videogame mentality, neglectful of books and newspapers, might over a period of time welcome a capsule style of

reporting, which when pushed to its farthest limits reverts to the style of the ideograph" (McLuhan and Power 1989, 88).

In the last years, the tendency shows that "mass media technologies have changed many times, which have caused changes in content, which have caused changes in audiences, which have caused changes in mass media effects" (Hiebert et al. 1995, 7). For instance, in "print and electronic media, these changes have produced several important results" because "they have made the communication process faster, cheaper, and easier" and this "has led to a great proliferation of media, both mass and specialized" that "has also reduced the role of the gatekeeper between the communicator and the audience" and "perhaps most important, it has allowed the communicator to be far more accurate in directing information to a specific audience" (Hiebert et al. 1995, 7). All these facts prove the features that were highlighted on Twitter in the introductory chapter of this work.

According to Andrea Press and Bruce Williams, "the contours of the media environment in which we live determine what we know about the world; indeed, in large part they determine our understanding of reality". In that sense, it is remarkable that "the new media environment within we live has fragmented audiences in ways that were unimaginable even 25 years ago – the mass audiences of the heyday of television is a thing of the past" and "new forms of communications technology mean that we increasingly consume a media diet unique to each of us" (Press and Williams 2010, 7). Here again is proven the belief of scientific investigation with new ways of textual personal information following Twitter patterns. The prototype is theoretically valid.

Also, this so-called media environment is defined as "both the specific communications technology in use (e.g., personal computers, newspapers, and television) and the social, political, and economic structure within which these technologies are used (e.g., how media outlets are owned, how individuals actually use them for a wide range of purposes, and the government regulations that affect them)" (Press and Williams 2010, 8). And within this process, "perhaps the most important technological development has been the computer, now an essential part of all mass communication" and a cornerstone of this new environment that "has made the mass communication process more reliable" because "more messages can be communicated" (Hiebert et al. 1995, 8). Therefore, and simultaneously, the literature tradition on the Internet and the new media environment that comes as a result of it, introduces the key

aspect of the fragmentation of audiences to explain how the communicative processes happen. This phenomenon of fragmentation connects with the framing theory that is explained and justified in the next section of this chapter.

2.2.1 Framing in the media environment

The framing theory was set out in 1993 by Professor Robert Entman in his famous article *Framing: toward clarification of a fractured paradigm*. In this work, Entman defines the act of framing as "to select some aspects of a perceived reality and make them more salient in a communicating text" in order to "promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described" (Entman 1993, 52).

The framing theory is relevant for this work regarding the characteristics of Twitter that are considered the basis of the *e-radio* functioning. On the one hand, framing is possible in Twitter because the way of communication in the network comes through short text messages that select individually different aspects of a same reality. These messages or tweets contribute to endorse several analysis of that reality, all of them indissoluble part of the communication text, but all of them different and provided by different sources at the same time. On the other hand, the framing theory also explains how the same process takes part on the radio, where the spoken word of the comments lively describe some salient aspects of the reality to define it in a way or another. Hence, that reality always comes into speech from consciously selected frames.

In that sense, it is crucial to keep in mind that the frames "have at least four locations in the communication process: the communicator, the text, the receiver and the culture" (Entman 1993, 52). All of them are part of the study among these lines because the experiment will take these factors into account for its own validity. Particularly, the experiment will compare a same location in terms of text between two different locations in terms of the communicator, especially when "deciding what to say" (Entman 1993, 52), if it is broadcasted in printed text or through spoken radio word.

The fact of comparing both outputs of information also means to let the subjects make a choice between two frames and two different cultural locations. Regarding to the latter, in "*ABC: The Alphabetization of the Western Mind*, Illich and Sanders (1988)" illustrate "how the transition between oral and written culture altered the ways

people understood reality, how they understood themselves, and how they organized their societies" (Press and Williams 2010, 10). Also, "just as the emergence of writing and printing altered the oral cultures of the world, so too did the emergence (…) of electronic communication and new forms of visual media that transformed the existing print culture" (Press and Williams 2010, 12).

All those considerations about framing in the message and the cultural system of the receptors, lead to the theoretical argument of the public opinion in the Internet. Press and William claim that the famous "fragmentation of television audiences can also be seen in television news". Thereby, "the notion of a mass audience, at least as defined in the latter half of the twentieth century, is quickly being abandoned as networks and their competitors vie for audience share by marketing to different segments of the population" (Press and Williams 2010, 18). Thus, the era of information is an environment where, "given the changes in technology affecting mass media today, we can summarize in a few words the changes that will affect our society: diversity, multiculturalism, individualism, fragmentation". The last term can also be understood in terms of framing the communication actions from the point of view of the cultural location. And so done, in the new scenario "the new technologies are decentralizing not only television but also all the mass media" (Hiebert et al. 1995, 433).

At the same time, there are "aspects of the Internet" that "further complicate the information environment and the struggle for control of it" (Press and Williams 2010, 20-21). These scholars say for instance that "chat groups and online discussions provide new venues for fans to discuss television shows, music, and movies; for patients to discuss their illness and the medical profession; for citizens to directly discuss public issues; and so on". Thus, "the new media environment challenges elites – political, social, and economic – by providing communication channels for ordinary citizens to directly produce and access information about political, social, and economic life, bypassing both traditional and new media gatekeepers entirely", like for instance, "the ubiquity of cell phones (…) coupled with the easy of uploading information, has led to numerous websites devoted to allowing almost anyone to post their own media messages" (Press and Williams 2010, 20-21). Twitter is a good example of that fact.

This master's thesis paper presents an audience research experiment in which the selected subjects will experience and judge a prototype based on Twitter interface that is

called *e-radio*. In the same way as Twitter frames certain aspects of the reality, the prototype will select some aspects of a radio speech and launch them while the audio is playing in a certain order of appearance. The interesting point regarding this theory will be to discover which output the respondents preferred to focus their attention to follow the stories. Also, considering the second research question of the work, to find out more understandings about how the audience experienced the prototype. This latter consideration will lead to comprehend how the future users of the *e-radio* decide to frame or give more salience to some facts of a story. If the answers of the questionnaire show some patterns here, the experiment will help to design similar strategies in order to successfully develop textual services based in users' habits or preferences.

2.2.2 The public opinion online

Twitter and the *e-radio* spread information through short text messages that frame certain facts of the news stories. Twitter users, simultaneously, shape ongoing debates about the framed aspects that create public opinion in the network. Thus, the concept of the public opinion has to be taken into account in this chapter too. Its theoretical implications complement what has been explained about framing before. This section approaches to the concept from the perspectives of Walter Lippmann's work, and the two-step flow of information theory.

Firstly, a relevant author for this topic is Walter Lippmann. In his studies on propaganda during the World War I, he defended "how easily facts could be distorted and suppressed in order to influence public opinion", so "most citizen's political actions are based not on firsthand knowledge but rather on the ephemeral 'pictures in their heads' that are largely created by media". In his opinion, "truth and news are not the same thing: the function of news is to point out the significance of events, but the function of truth is to bring hidden facts to light" (Press and Williams 2010, 70). Again it can be checked the relevance of the concept "salience" that interrelates framing with Lippmann's contribution. In his work *Public Opinion*, Lippmann says that "the unseen environment is reported to us chiefly by words" that "are transmitted by wire or radio from the reporters to the editors who fit them into print" (Lippmann 1997, 41) and "men command fewer words than they have ideas to express, and language, as Jean Paul said, is a dictionary of faded metaphors" (Lippmann 1997, 42).

The meaning of that implies framing in the sense of clearness and understanding. The salience concept comes from the interpretations of the journalists and the audience since "of any public event that has wide effects we see at best only a phase and an aspect" (Lippmann 1997, 53). According to the famous journalist, "a report is the joint product of the knower and known, in which the role of the observer is always selective and usually creative" so "the facts we see depend on where we are placed, and the habits of our eyes" (Lippmann 1997, 54). At the end, as he reminds, "every newspaper when it reaches the reader is the result of a whole series of selections as to what items should be printed, in what position they shall be printed, how much space each shall occupy, what emphasis each shall have" where "there are no objective standards" (Lippmann 1997, 223). This phenomenon is also known as 'priming' or how journalists tell a particular story" (Press and Williams 2010, 81), and it can be easily contextualized as a new way of framing the salience in the messages. All of that explains how the public opinion comes up since "on many subjects of great public importance, and in varying degree among different people for more personal matters, the threads of memory and emotion are in a snarl" because "the same word will connote any number of different ideas" (Lippmann 1997, 254).

Hence, Lippmann is very interesting for the design of the *e-radio* prototype. Especially because the subjects will provide valuable findings about how it works and they will be "selective" and "creative" in their experience. They will test a news App that will create public opinion on the Internet. Thus, their opinions will show not only how they frame the most important aspects of their participation but also what their feelings and ideas for improvement are.

Secondly, the "two-step flow of information theory" is related to Lippmann's point of view about the audience's opinion. This theory explains how "the Internet allows everyone to consult any sort of expert system and provide him-/herself with relevant background information independently of his/her primary news provider", so "while in the past citizens mainly had access to expert systems via the old media or via a library, they can now bypass these gatekeepers and connect directly to these systems, whether for personal interest or to qualify their new feature" (Carlsson et al. 2006, 23).

In that sense, the concept of the "gatekeeper" defines a theoretical approach in this paper. The Twitter interactivity imitated by the *e-radio* allows users to connect

easily with others by simply following their accounts in order to receive updates. This breaks the barriers between the media and the public because the network favors a more fluent and direct contact between audience and journalists. The public opinion involves new sources of information and fragmented audiences commenting together in massive online public debates. The *e-radio* will continue in the same direction.

The *e-radio* prototype combines Twitter with radio, and the feedbacks of the respondents will help to decide which elements are the best of both outputs to design the final version of the gadget. The agenda-setting and the framing theory are part of this design, especially regarding to salience "certain issues" and "build up public images".

2.2.3 Internet frameworks

Other more recent changes have appeared nowadays that must complete the approach to framing the public opinion on the Internet. For instance, "the media environment is very different now, and is much more participatory as evidenced by the proliferation of phenomena such as blogs, Web pages, chat rooms, Twitter, and so on, all of which have become accessible to almost all segments of society" (Press and Williams 2010, 159).

According to Andrea Press and Bruce Williams, the "new technologies facilitate a more interactive type of media text, one more easily amendable to the participation of a wide variety of people, and easily available as well to those who do not participate in its creation". They defend that the "media content has entered a new era in which traditional media forms, texts, and modes of ownership will soon be unrecognizable" since the phenomena of "globalization and international ambiguous shape of media identities" (Press and Williams 2010, 162).

Eventually, the consolidation of Internet has brought the arrival of social networks. In the particular case of Twitter and microblogging, both major aims of the current work, "these new frameworks have become more and more focused on enabling media creation, as this so-called amateur media becomes the raison d'être of these very professional media organizations" (Mandiberg 2012, 1). Michael Mandiberg also refers to Yochai Benkler to remember that "social sharing and exchange is becoming a common modality of producing valuable desiderata at the very core of the most

advanced economies – in information, culture, education, computation, and communications sectors" (Benkler, Yochai, in Mandiberg 2012, 19).

The comprehension of Twitter within mass communication is a complex reasoning though. Boyd suggests, "instant messaging is a tool used by many but often in different ways and for different purposes. There are those who log in solely to communicate with others. And there are those who use it to convey presence and state of mind" (Boyd, Danah, in Mandiberg 2012, 72). And from the point of view of audiences, it is also true that "a radically new attitude toward audiences, emerging in recent years alongside the rise of digital technologies, social media, and user-generated content (…) revolves around a series of digital technologies that shift the direction of communication from one-to-many broadcasting system to a many-to-many conversational system" and "these technologies include (…) new channels of distribution like Twitter" (Anderson, C. W., in Mandiberg 2012, 80).

Regarding the last reference, the main conclusion overall has to do with the well-known Web 2.0 in the most recent world of Internet. At this point, Mandiberg claims through Felix Stalder the double dimension of "democracy" and "spectacle" produced by the Net. On the hand, "the social meaning of the technologies is not determined by the technologies themselves; rather, it will be shaped and reshaped by how they are embedded into social life, advanced, and transformed by the myriad of individual actors, large institutions, practices, and projects that constitute contemporary reality". On the other hand, "all forms of social life involve communication; thus, changes in communication (technology) directly affect all forms of social life". This last idea, he reminds, "first advanced by Marshall McLuhan in the early 1960s, has been a frequent theme in the techno-utopian (and dysopian) perspective even since" (Stalder, Felix in Mandiberg 2012, 242).

The concept of Web 2.0 is another theoretical argument for the validity of this chapter. According to Shirky, other considerations that "distinguishes Web 2.0 from Web 1.0 is less functionality than accessibility". For this scholar, "organizing without organizations has become much easier for three reasons". The first, that "failure is cheap", the second, that "since everybody can publish their own material, it is comparatively easy for people with common interests to find each other" and,

eventually, the third is that "trust is quickly established, based on everyone's published track record" (Mandiberg 2012, 244).

Finally, a last consideration associated with the relation between the media and networks such as Twitter is the decrease of credibility in the former as a consequence of the raising of the latter. Mandiberg says that "over the last decades, trust in mass media has declined" and "it is widely seen as biased and in the hands of special interests" where "new modes of communication can be less institutional and commercial and are often perceived as more authentic" (Mandiberg 2012, 245). In that sense, as it was stated in the introduction chapter, the eventual goal of the experiment is to collect valuable feedbacks in order to not only develop the *e-radio* gadget properly, but also to do further research on new global text services. The truth is, despite of the described importance of Internet in media communications nowadays, that yet "the study of media reception in the new media environment is a complex process that has only just begun to be attempted by media studies scholars" (Press and Williams 2010, 187). "We live in a mediated life" (Ibid, 194), but there are still missing more relevant studies about it.

Consequently, the "reception in the new media environment involves considering a much more complex situation that takes into account the ability of media viewers and users to participate actively as they receive media content, in a process that generates new and different types of media products" (Press and Williams 2010, 164). Hence, for the creation of new media products in this context of "reception", a "multimethodological approach" is what "works best" (Ibid, 164). Thus, "the new media environment is one in which 'reception' as a paradigm must be enlarged to include the creative participations and productions that this environment enables" (ibid, 165). In the particular case of Twitter and its technology, therefore, "Boyd and Ellison (2008) argue that social-networking sites should be understood as networked publics that are simultaneously imagined communities and actual technological spaces" (Press and Williams 2010, 166). Thus, this audience research experiment is seeking for qualitative answers to develop a new media product based on all the previous theoretical approaches described before. The e-radio includes creative user participation and aims to explore the Internet environment from a better understanding of public experience.

2.3 Internet biases and audience experiments

This final part of the chapter presents and discusses some examples of audience experiments developed in different fields of analysis. All of them illustrate the importance of the scientific experimental tradition within media studies. However, the recent phenomena of social networks and especially the eruption of Twitter present yet a lack of experimental analysis that this work pretends to compensate.

2.3.1 The concept of bias

To begin with, there is the concept of "bias" that must be explained here. In their study about the use of the new media environment in the United States during a presidential election in 2006, Press and Williams found that "many informants were concerned about 'bias' in the news they read and heard". Internet was seen "as avoiding the biases of old media" and "they felt it gave them control over the information they sought" so "for many of the citizens in their study, Internet occupied a special role in their daily lives (…) it was seen as the source of 'unbiased', up-to-date news" (Press and Williams 2010, 183).

Thus, the bias in the information is another interesting point of discussion in this chapter, but especially nowadays considering how "communication has been turning its attention to the new media" and "researchers outside the communication field have been concerned about some aspects of the new media since the early 1960s" where "the bulk of this attention has been focused, of course, on the computer – not as a communication medium, but as an information processor, computational device, and simulator of human mental functions" (Rice et al. 1984, 23). Now it is when "new ways of encoding, transmitting, distributing, and displaying information appear most overtly in the form of new communication technologies" (Rice et al. 1984, 34). Also, "new media are blurring distinctions" like "technician versus artist, general versus limited access, regulated versus unregulated media, communications versus processing, time and space, active versus passive control, transmission versus reception" where "the last two of the blurred distinctions lead to a concept crucial: interactivity" (Rice et al. 1984, 34).

In that sense, the Internet "provides a much wider public space than any other medium (…) in respect to the number of people" participating; secondly "it provides a much more differentiated distribution system" where "recipient can also be a sender";

thirdly, it "can be used synchronously (as electronic media) and asynchronously (as print media)" so "information can be updated immediately and accessed around the clock" just like traditional radio; and, finally, "news can be provided and spread with relevant background information faster than in any other medium", which are exactly the strong points of the *e-radio*, offering "facilities for any sort of debate on any issue" and "a huge public memory and archive" (Carlsson et al. 2006, 14).

These scholars also point out "in cases of dramatic events, it may come close to the function of broadcast media, but this is an exception" because generally "it is not a broadcast medium, as it normally doesn't have a synchronized audience" but "rather a spread-cast medium" (Carlsson et al. 2006, 24). Thus, one of the goals of the experiment is to prove whether that is true or the Net can act as a broadcast medium with the *e-radio* since it combines the best of Twitter with the best characteristics of traditional radio broadcastings.

More specifically, the differences between radio and text broadcasting reveal a contrast of biases. In that sense, the "speech is synchronous, limited to be within earshot and facilitative of face-to-face contact, embodied communication and deicsis" because the act of "writing is asynchronous, based on a distance between reader and writer in time, place and situation" and also because "writing and print are visual, print adding among other things many identical copies, thus reducing the price for each and increasing the number of people who can access the same content" (Carlsson et al. 2006, 13). Meanwhile "radio is auditive" because "the print media are asynchronous, the electronic synchronous" although Niels Ole Finnemann reminds that "to some extent biases can be modified" and the *e-radio* could be an excellent combination of all those biases becoming itself a new medium because "to bypass the biases of one medium you need another medium" (Carlsson et al. 2006, 13).

The biases of information also show some similarities between the printed radio experiment, Twitter and SMS services. Hereby, the "electronic media are also providing a broader range of online services – newsletters, pod-cast news, SMS news for cell phones, and streamed audio and video – than the print media", although "the Internet is not simply providing a new set of commercial and as well as non-commercial channels for news" because the "overall landscape for news coverage is also changing in countries where the Internet and the cell phone have become widespread" (Carlsson et

al. 2006, 23). “Now”, professor Finnemann says, “news is distributed by way of a growing number of radio stations and Net radio stations, cell phones (text messages), and pod-casts (sound for MP3 players and desktop computers), just as the supply of various formats for text news on the Internet” that “has become increasingly differentiated (newsletters, RSS feeds, web logs, news agents, and other kinds of user-tailored services)” (Carlsson et al. 2006, 23).

In any case, “all media may have to adapt to a new formula for news, allowing anybody to access news anytime and everywhere” since the Internet is “the backbone that makes this possible” (Carlsson et al. 2006, 23). The current work aims to present the *e-radio* as the best example of that “new formula”. Hereby, both the interactivity and the biases in the communication in the Internet environment are important for the sake of the experiment.

2.3.2 Examples of audience research experiments

There are many different examples of audience research experiments since this is a long tradition of study. In this part of the chapter, some works are highlighted to help contextualize the design of the *e-radio* sessions inside that tradition.

First of all, and regarding the latter field, “perhaps the most formative of these effects experiments was conducted in the lab by Albert Bandura, who set out to determine whether the modeling of violence [in the television] increased the aggressiveness of children” (Schrøder et al. 2003, 282). By “comparison”, Bandura found that the “learning through modeling was differentially influenced by the sex of the model” so “following contact with the male model, boys showed more aggression than girls, the difference being particularly marked on highly masculine-typed behavior” (Schrøder et al. 2003, 284).

Another line of experiment research was elaborated by scholars such as “Link” or “Daniel Starch” within “the social psychology of marketing”, that “could systematically use psychometrics in experimental approaches to solve the pragmatic problems facing advertisements, such as improving copy and making advertisement more effective” (Schrøder et al. 2003, 293).

Regarding “public opinion and military persuasion”, between the “1920s and 1930s, psychologists like Likert and Thurstone innovated with novel attitude scaling

techniques" (Schrøder et al. 2003, 295). After that, "pioneering political scientists like Lasswell, Lazarsfeld Key and Berelson began to apply the mathematical techniques of surveying to test the different attitudinal factors shaping election results" (Schrøder et al. 2003, 295). That line of investigation would have continuation in the "outbreak of the Second World War" with the studies of "propaganda" and "maintaining morale" in the "US Army" by Hovland (Schrøder et al. 2003, 295). In the more particular case of "agenda setting" and "media effects on the cognitive or belief models of persuasion", "Cambell" and "McCombs" (Schrøder et al. 2003, 306) were main references as it will be explained later on.

The contribution of McLuhan to the experimental audience research is important too. He was "the first to test the educational possibilities of television, by experimentally comparing his student's learning from watching a film, hearing a lecture or from reading", which is pretty similar to the experiment design of this study in a sense, because in his sessions "one group received information via radio, one from TV, one by lecture, and one read it themselves (McLuhan 1964, 271)" (Schrøder et al. 2003, 312). In his conclusions, "television was [proved] a cool medium" as it was discussed previously here, because of "requiring intense total involvement" since "information was presented to both eye and ear" while "print and reading, on the other hand, invoked a more linear rational decoding (McLuhan 1964, 269)" (Schrøder et al. 2003, 312).

It is also interesting to observe the models of experiments with the Videotex and Teletex because they are found as inspiring for the experiment of this work. The Videotex is defined as "an example of media combined" (Rice et al. 1984, 47). It was "originated at the British Post Office in the late 1960s, as Sam Fedida figured a way to increase utilization of the phone service" and it offered "full channels of information and, thus, access to much larger teletex data bases" because "the channel can be broken into multiple teletex services, or diverse content can be made available at different times of the day or in different proportions" (Rice et al. 1984, 48).

In that direction, the Videotex itself is not a predecessor of Twitter and microblogging in a strict way, but there are some good cases of experiments to take as a reference for the current thesis paper. These experiments were developed to test the new media in first audiences and the procedure was similar to what is described in this work: beginning with a testing part for the respondents and then qualitative questions about

the product. The Tyler's (1979) definition of Videotex seems the most serviceable here, as a "system for the widespread dissemination of textual and graphic information by wholly electronic means for display on low-cost terminals (often suitably equipped television receivers) under the selective control of the recipient, using control procedures easily understood by untrained users" (Rice et al. 1984, 47-48). The Videotex "generally involves two-way (interactive) communication by means of a telephone link (…) and a local or distant computer data base via some network" where "the user selects specific pages from a large computer data base" (Rice et al. 1984, 47-48). Hence, "Videotex distinctions are between (…) intermittent interactivity (where the information is downloaded and stored in the processor, freeing up the phone line) and continuous (involving a connection during the entire session)" and also "there are clear benefits and disadvantages with the Teletext and videotext approaches: trade-offs of content limits, access time, interactivity, expense, utilization of networks, and changing mechanisms" (Rice et al. 1984, 47-48).

A good specific example of experimental research that could be referred at this point is "the Bildschirmtext Project in the Federal Republic of Germany (Rogers and Picot, 1983)" where "the evaluation included an acceptability study of potential users of Bildschirmtext and of the actual users in a short test phase of this interactive TV technology" (Rice et al. 1984, 84). The goal "was to gain understanding of future acceptance of Bildschirmtext, by dealing with such questions as how many (and which) households would purchase the services, and what price, and how the technology should be designed/redesigned for user acceptance" and a "somewhat similar strategy was chosen for the planning, design, and implementation of the new Teletex service in Germany (Picot and Reichwald, 1979)" (Rice et al. 1984, 84). That is exactly the same main goal of the *e-radio* prototype in this study.

At this point, the "uses and gratifications theory" should be included in the chapter because the new App would provide a lot of short messages and users will decide what to read depending on their interests. This theoretical perspective "starts with the very large assumption that media use, including newsreading, serves some ulterior purpose(s) external to the communication behavior itself" where "some of these purposes include pleasure, entertainment and fantasy" (Rice et al. 1984, 107). At the same time, "some directed and goal-motivated purpose is still assumed" and "as such, the research perspective suggests" that newsreaders "should be presented with lists of

ulterior purposes that newsreading might serve, asking them to indicate which such purposes (gratifications sought) are served" (Rice et al. 1984, 107).

Without any doubt, the media gratifications theory is "a debate" that "has largely been resolved among adherents of a gratifications approach" with a "variety of 'multitheory' schemas" that "have been developed, illustrating diverse integrative theoretical strategies" such as "McQuail and Gurevitch's (1974) view (…) from structural/cultural action/motivation", or "Wenner's (1977) observation (…) through multidimensional integration", or "Rosengren and Windahl's (1977) assessment of (…) integrating the three mass communication theories of individual differences, social categories, and social relations posted by De Fleur (1966)", or "McGuire's (1979) well-explicated argument relating some sixteen theoretical positions to gratifications research" (Rosengren et al. 1985, 15). As well, the "development of these broad-base theoretical frameworks has yielded recently to more explicit theoretical constructions" that concern "expectancy-value relationships to gratifications" like "Babrow and Swanson, 1984; Blood and Galloway, 1983; Galloway and Meek, 1981; Palmgreen and Rayburn, 1982, 1983, 1984; Rayburn and Palmgreen, 1983, 1984; Van Leuven, 1981"; that involve "transactional processes of gratifications and effects (McLeod and Becker, 1974, 1981; Wenner 1982, 1983a)"; and finally, that engage "the dimensions of audience activity (Levy, 1983; Levy and Windahl, 1984; Windahl, 1981)" (Rosengren et al. 1985, 15). Those last ones become eventually the most interesting contributions for the sake of the current experiment.

As it was discussed previously with the audience experiment characteristics and demonstrated with the gratification studies and the teletex and videotext experiments, the aim is always to extract conclusions from advanced users. In other words, the current experiment tries to test the *e-radio* prototype looking for new ways of global textual services: meaning new global gratifications for the new media users as a result of the new fragmented audiences that consume information in the Internet media environment. In that sense, David Buckingham points out for instance, "the advent of uses and gratifications research in the early 1960s" appeared to make a shift "towards the notion of 'active reader'" and "according to this approach, readers were seen to be actively selecting and using media for their own diverse needs and purposes – for example, as a means of 'escape' from difficult social relationships, or alternatively as a source of information, relaxation or social contact" (Buckingham et al. 1993, 8).

Another example of this use and gratification experiment tradition comes in one study by "Williams, Phillips, and Lum" in "1982", where "twelve different media were rated by 68 university students according to their importance for fulfilling 35 of the 'media-related needs' as defined in an earlier study by Katz and his colleagues (Blumler and Katz, 1974; Katz, Gurevitch, and Hass, 1973) of uses and gratifications". There, it was very interesting to check "how certain other media would be differentiated according to these needs" and "particularly visible in the results was how the telephone elicited responses markedly in accordance with most person-centered needs that might benefit from a medium high in social presence". For instance here, the "use of the telephone was most highly related to the need 'to spend time with friends'" (Rice et al. 1984, 108-09).

Regarding the current experiment, it is pertinent to emphasize "ludenic newsreading theory" (Stephenson, *The Play Theory of Mass Communication*, 1967) for the design of the prototype. This argument "asserts that the process of newsreading is intrinsically pleasurable and that intrinsic pleasure is at the root of both a mature, orderly, and highly ritualized form of newsreading as well as more casual, spontaneous, and unstructured form of newsreading" which looks similar to the microblogging display. This theory is also interesting because it could "hypothesize that strictly task-oriented users may not be generalized heavy readers" which is also the "raison d'être" of the *e-radio* qualitative methodology. In other words, it is taken into account that new media users read less heavy than before, looking for some specific details in the big ocean of Internet. Turoff and Hiltz stated about online newsreading that "the increase in the speed of response, the ability of current responders to view responses to that moment, the private message exchanges resulting from responses, follow-up conference discussion, and most importantly, the ability to view how many relative inquiries and responses any member has made, all make the behavior of individuals and groups in this environment very different than what can be generated in any sort of print medium [Turoff and Hiltz, 1982b]" (Rice et al. 1984, 108-09).

As it will be carefully explained in the methods chapter, the qualitative questionnaire is orientated to figure out how is the news exposure with radio and the printed radio App working simultaneously. The "uses and gratifications" and "ludenic" theories are both considered for the design of the prototype and questionnaire that makes the experiment. And furthermore, two key concepts derived from this theoretical

approach influence this choice. First, the "convergent selectivity" that "involves the individual's selection of something for himself or herself in ways that make the product uniquely individual", since the act of "newsreading is a process of convergent selectivity, whereby highly individualized rituals within the newsreading interlude 'customize' the experience". The second concept is "apperception", defined as "the characteristic of individuals to perceive only those aspects of a more complex situation that tie in with prior interests" (Rice et al. 1984, 110).

According to the former paragraph, the *e-radio* could be defined as a "ludenic electronic newspaper" because it "consists of a number of informational items strung together electronically in a manner that enhances the newsreading play of a particular audience microsegment". Linked this assumption to the agenda-setting theory that was previously explained, it can be concluded that "the exacts characteristics of an electronic micronewspaper would be determined by the combined behavior of audience segment members and special advertisers, electronic journalists and editors, and data-base providers and indexers", where also "newsreaders of the artificially 'mass' pulp demands rather than an objective generic agenda of information 'needs' (McCombs and Shaw, 1977) – are set free to select for themselves from a number of electronic micronewspaper titles" (Rice et al. 1984, 120).

And relating again to the design of the experiment, the "key to successful development of electronic micronewspapers" is "development of forms consistent with the type of play that characterizes the newsreading interlude" where "vital to such play (…) is regular and consistent style or form of presentation" and "the indexing of information must become part of the subjective play of the newsreading interlude" (Rice et al. 1984, 120). Thus, it must be examined here the volatility of radio messages that somehow appears too in the Internet. Buckingham refers to Paul Willis' *Common Culture* work reminding that "the notion that texts contain fixed messages which are simply imposed upon audiences is therefore rejected" and "meanings are made in the process of reception, and are thus diverse and unpredictable" because "viewers, listeners and readers do their own symbolic work on a text and create their own relationships to technical means of reproduction and transfer" (Buckingham et al. 1993, 204).

Conclusively, all these theoretical approaches are expected to lead the characteristics of the experiment prototype that define the design of the *e-radio* project.

3. RESEARCH METHODS

This master's thesis paper conducts and analyzes an audience research experiment in the media discipline. It tests the prototype of a new media product called *e-radio* that seeks for feedback from specialized users to be improved and to study in depth its potential. In this chapter, the methods and data of the study will be presented, discussed and justified among six different sections that describe the scientific process.

3.1 The qualitative approach

Fernando Bermejo clarifies that "audiences can be studied in many different ways, although most current work on media audiences deals with issues of uses and interpretation" (Bermejo 2007, 2-3). Following that tradition, the experiment presented in this work is in charge of the testing of a new media prototype where usage and interpretation are the main targets to revise. The ambition is especially significant since the research field remains highly unexplored yet. In fact, Bermejo also reminds that "in spite of the (…) efforts to examine and analyze the Internet audience from within the academy, the truth is that scientific production on the subject is rather limited" because of the "youth of the Internet phenomenon" and "the complexity and ambiguity that the object of the study, the Internet audience, presents" (Bermejo 2007, 18).

According to Klaus Bruhn Jensen, "audiences are everywhere, as recipients and increasingly as senders of information" so "researchers who try to account for the relationship between media and audiences, in turn, have access to growing masses of evidence" because "data are everywhere" (Patriarche et al. 2014, 227). The new communication environment, as a result of the omnipresence of the Internet, has set up a countless number of possible figures of quantitative analysis in the media research. However, since the audiences have also become "communicative agents in their own right" (Patriarche et al. 2014, 228), this study is focused on a qualitative perspective.

In the recent field of Twitter research, which constitutes the starting point for this work, an analogous reasoning can be done. Similarly to what was said in the previous paragraph, Alice Marwick recalls that "Twitter's success has made it a rich research site for scholars interested in online interaction, formation dissemination,

activism, and plethora of other subjects", especially in the "quantitative data analysis" due to the "sheer volume of users, tweets, and *hashtags*" as well as "big data number-crunching" (Weller et al. 2014, 109). However, Marwick explains that "while such [quantitative] studies are valuable, inferences made on the basis of the properties of a large data set are limited in what they can explain". That is, "asking people about their motivations for using Twitter would probably reveal an array of interesting motivations" because it is "such a vast network with so many user groups" that "simply collecting a great deal of data may not be adequate for describing use beyond simple queries" (Weller et al. 2014, 110).

The truth is that audience studies "have traditionally been divided between researchers interested in quantifying the amount of people receiving a media message and those committed to achieving a deeper knowledge about the meaning attributed by individuals to those messages". The interest of this paper is to study the latter and in that sense, "qualitative approaches explicitly refuse generalization of their findings gaining a comprehensive depth in order to understand how media content is both consumed and interpreted by users" (Patriarche et. al 2014, 39). That concern matches the purpose of the methods employed in this research. It is important to assess here that the idea of the experiment is to explore uses and gratifications of the new media product which prototype will be tested during the sessions. From the interest that was already theoretically justified previously, the approach that is considered in the following methodology chapter is the qualitative analysis, which, as "Friessen and Punie said in 1998" is perfect to "enable us to say a lot about a few people" (Schrøder et al. 2003, 349). This kind of analysis will be now explained.

According to Robert K. Yin, qualitative methods can be defined through several characteristics. They are used for "studying the meaning of people's lives" and particularly for "representing the views and perspectives" of the "participants" of "a study". As well, qualitative methods act by "covering the contextual conditions within which people live" while "contributing insights into exiting or emerging concepts that may help to explain human social behavior" and "striving to use multiple sources of evidence rather than relying on a single source alone". According to that, Yin recognizes that "experiments, for instance, control out this conditions (hence the artificiality of laboratory experiments)" and "quasi-experiments admit such conditions

but by design nevertheless focus only on a limited set of 'variables', which may or may not fully appreciate the contextual conditions" (Yin 2011, 7-8).

Consequently, the experiment of the *e-radio* prototype looks like a perfect study model to control the conditions under investigation where the validity does not come from a deep generalization of the findings, but from the design and the justification of the variables discussed in this chapter.

Continuing with the defining argumentation, Yin also points out that "similarly, qualitative research can be the occasion for developing new concepts" that "might attempt to explain social processes" and that can be "used to provide potentially useful explanations and to form a platform for new inquiries" (Yin 2011, 9). Again, since the *e-radio* is designed as an experiment for its testing, it can be argued that the prototype appears to be one of those "new concepts" from which the insights are extracted.

At the same time, according to Schrøder, Drotner, Kline and Murray, "qualitative research has greater ecological validity, because informants can put items in the agenda, researchers can probe" and "the data are strongly contextualized". Quoting other scholars, they remind that "qualitative observations provide greater depth of information about how people perceive events in the context of the actual situations in which they occur" (Schrøder et al. 2003, 349), which is exactly the target of this study.

However, Yin explains that a "formal qualitative research 'methodology' may not exist" (Yin 2011, 10). The "qualitative research's desire" is "to capture the meaning of real-world events from the perspective of a study's participants" which can "unavoidably subsume a second set of meanings of the same events" (Yin 2011, 11). From that point of view, an important observation must be done. The qualitative experiment of this work appears to be a combination of slightly different qualitative methods of research. Firstly, the experiment design itself is divided into two phases with separate varied procedures each: a news reception interaction and a written questionnaire for the subjects. Secondly, the qualitative interview analysis that will be used to interpret the collected data after the sessions.

Nonetheless, considering the field of analysis, "audience research and user research are becoming unquestionable parts of this process which, following Fairclough (1993), we may name the 'technologization' of communication" and "behind this term

we find media institutions that are supplementing the quantitative base of their research with a wide array of qualitative methods, in their quest to understand and control audiences" (Schrøder et al. 2003, 348). Thus, the qualitative approach of this paper is also justified regarding the Internet environment, and also because within the Net "online spaces like social networking sites and microblogging services are offering their users a lot of interesting tools to follow and to visualize some of the processes they enable" (Patriarche et. al 2014, 41). According to the latter, the so-called "social media" have "been used to describe how viewers or listeners are now potentially participants, that websites facilitate interaction rather than one-way communication and that the age of passive media reception might be definitely over" (Patriarche et. al 2014, 144).

Finally, Marwick claims that qualitative methods for Twitter research "can help [to] unpack user presumptions about individual technologies, distinguishing general communicative or social media behavior from behavior that is specific to a platform", and she argues that "qualitative methods can also reveal much about social norms, appropriateness, or larger social concerns about technology" (Weller et al. 2014, 110). In the end, "given the often quantitative and 'big data' oriented rationales of research on academic Twitter use, qualitative and more interpretative approaches into the how and why of scholarly Twitter behavior may be another fruitful direction for future research (Veletsianos, 2012)" (Weller et al. 2014, 407). To sum up, Marwick reminds us that "any qualitative method can be better used to understand Twitter" (Weller et al. 2014, 118) because, as it was described before, "qualitative studies seek to understand meaning-making, placing technology use into specific social contexts, places, and times" (Weller et al. 2014, 119).

3.2 Experiment design

As it was presented in the previous section, the current study concerns an audience research experiment that is developed with a methodology involving different qualitative methods. In this part of the chapter those methods are going to be described and explained in order to clarify the design of the scientific process and the elements that take part in it. It will begin with a more theoretical definition of what was conducted and then followed by a detailed plan of its structure.

First of all, the study presents an experiment in media research. An experimental research is "one kind of intellectual activity" that represents a "powerful advantage for testing predictions" and includes "issues of theoretical foundation, abstract design, operational concerns, and interpretation of outcomes" because "a study is an experiment only when a particular ordering occurs" meaning when "an investigator controls the level of independent variables before measuring the level of dependent variables" (Murray Webster and Sell 2007, 5-9). In reference to it, every "experimental inquiry starts by asking: if X causes a change in Y, how can I observe that relationship in such a way to confidently say whether X significantly contributes to that change" and, in that sense, the "experimental design refers, then, to a process of decision-making through which the researcher attempts to optimize the validity of the study" (Schrøder et al. 2003, 325). In order to validate the current work, the initial consideration then is to clarify that the experiment aims to investigate insights of a new media product which prototype will be tested among specialized subjects.

This design is, according to Schrøder, Drotner, Kline and Murray, the characteristic of a "laboratory experiment" because "the researcher chooses to increase explanatory power by controlling both the sample and the situation, to ensure that the comparisons provide a valid test of the hypotheses". Also, in a "controlled experiment" like this, the "assumptions about the causal processes are built into the treatment" which "refers to attempts" in order to "manipulate the subject's experience of the independent variable, and elated aspects of the situation in which the subjects experiences it" (Schrøder et al. 2003, 326). Like all the experiments, the research action is "artificial" because "experiments allow observation in a situation that has been designed and created by investigators" so one of the objectives here will be to "invite and enable clear replication by other investigators and comparison across different settings" (Murray Webster and Sell 2007, 11-13).

A laboratory experiment is "an inquiry for which the investigator plans, builds, or otherwise controls the conditions under which phenomena are observed and measured" (Willler and Walker, 2007, in Murray Webster and Sell 2007, 25). This experiment will analyze how the already introduced *e-radio* prototype will function under a certain frame of news reception conditions. Like all the laboratory experiments, there are subjects or participants who will make it possible and from whom the data and later conclusions will be made. And like all the laboratory experiments, a set of

variables that are defined as “anything that takes on different values, something that can be measured” and “tied to measurement operations” (Murray Webster and Sell 2007, 7) will be studied.

The key term to explain these variables is the well known “operationalization” of those in the design. It refers to “test for a causal relationship” in which “we must both establish that a predicted change in the dependent variable follows the independent one, and determine whether such changes can confidently be attributed to the independent variable”. Also, it means that “a scientific argument cannot provide absolute proof of a determinate relationship, but only eliminate explanations” because “proof is constituted through process of evaluating competing causal explanations stated in the form of hypotheses” since they are “formulated as two predictions that compare our expectations” (Schrøder et al. 2003, 324-25). In the last part of the former chapter the hypotheses of the study were enounced. The goal was to check the feedback of the prototype based on how the subjects responded to the news reception exposure through it. The variables will depend on the collected impressions of these subjects.

Simultaneously, there is a “way of framing the sampling controls” in this kind of “lab experiment” that is done “depending on the assignment of subjects to conditions”. In that sense, this is a “clinical trial (between subjects) design” because the aim is to “compare a group of subjects randomly assigned to the treatment condition where it is known whether the independent variable occurs, with similar subjects in a control group” (Schrøder et al. 2003, 327). Thereby, the interesting part of the experiment would be the feedback provided by the respondents at the end of the session. The data will produce the results that strengthen or weaken the hypotheses, and if so, it will help to understand better how and why this behaviour occurred. The gathered opinions could also shed valuable guidelines either to develop a news service App based on the prototype or to find new bias of textual communication tools among all kind of users worldwide. In that sense, the goals can follow different targets depending on the interest of developers or academics: customer relationship management, advertising, crowdfunding strategies, etc.

Concerning now the design project in depth, the experiment can be divided into two different methods of investigation. On one side, there are active sessions for testing the prototype in a particular and prepared set of communicational conditions for the

respondents, the purely experimental method. On the other side, every session is completed with a qualitative questionnaire through which the valuable data will be collected and eventually analyzed. This is very important to make clear at this point because the conclusions of the research come only after a thorough qualitative interview analysis of the written answers given by the subjects. Under no circumstances the aim is to create new insights or generate theories from a direct participant observation of the subjects during their active contribution.

The experiment was conducted in September over several series of sessions at the Institutt for Medier og Kommunikasjon (IMK) at the University of Oslo. The sessions took part in an empty quiet classroom where the laptop of the researcher played the presentation software that ran the experiment prototype and that held the qualitative questionnaire afterwards. The software employed was simply a set of slides running on the Windows PowerPoint for the experiment, and a Windows Word document for the questionnaire.

The group of analysis consisted of 15 subjects who were Bachelor, Master or Doctoral Students in any discipline of Media Studies by the University of Oslo or any other academic centre. The reason behind this target group of people was to build up the specialized audience that was suitable for the conclusions. That will be explained later in this chapter. The recruitment was done via email or phone. All of them were asked to become volunteers for a "study in audio and text news reception" because it was important that they did not know about the real purpose of their participation for the sake of the experiment. The selected respondents participated individually in assigned sessions for an estimated time of 20-30 minutes each.

Every individual session of the experiment was divided in two main phases. In the first part, the subjects experienced two different news reception exposures for a limited time separated by a pause. In the second part, they had to answer to a short questionnaire with a few quantitative questions and qualitative opened inquiries about their experience during the first phase. The instructions about what to do and those oriented to solve possible upcoming doubts were provided at the beginning of every session by the examiner –myself– and later on when it was necessary.

During the news reception phase of the experiment, the respondents interacted simultaneously with the *e-radio* prototype and news radio broadcastings. At this point,

they faced two news reception exposures that were designed to be separated by a pause, for the total duration of approximately three minutes. In each exposure, they received two sets of information launched at the same time through the form of audio and texts on the screen of the computer. The audios were the emissions of two real radio pieces, the first about a weather forecast in the USA, and the second about a discussion on marriages in Norway by a New Zealander radio station, whereas the texts were displayed as short upcoming messages on one side of the screen. Both systems were synchronized so they started running and ended at the same time, with no replay. Within this period, subjects were told to freely decide on which system to focus their interest, ignoring that the information given by the radio and the printed radio reporting were identical in content. They were told to choose either to read the messages on the screen, to listen to the radio broadcasting or to try to do both things at the same time if they thought they were able to follow the two inputs in a satisfactory way.

After that, they jumped onto the second phase of the experiment, where they had to answer a short questionnaire given by the examiner directly in the Word document. This was designed for the convenience of each participant and the quickness of the eventual data collection. On one hand, it had two brief quantitative sections with a few multiple-choice, post-coding and likert scale questions about the information received. The intention of it was to avoid the biases of misunderstanding and faster data classification. On the other hand, there were mainly purely qualitative questions about the news reception phase that they experienced and the way they valued it.

As it was explained before, the experiment does not pretend to make general inferences about the population. On the contrary, the main aim is to test the *e-radio* prototype in a highly specialized audience also familiarized with technology and journalism/communication procedures. This prototype gadget would try to imitate the Twitter technology based on the immediacy of the written word that exists nowadays in the electronic portable devices. The final goal is to gather relevant opinions and understandings from the testers in order to find new ways of global text communication services. The dependent variables provided by the answers in the questionnaire will determine the viability to design a news app that could become a type of personal news service software, but also to set up the beginning of further research projects looking for new trends in global textual interactions as described formerly.

Regarding the generalizability of the experiment and according to Webster Jr. and Sell, again it must be said that it is "artificial" like "any other experiments" and "does not mirror any real setting" or remains "representative of any particular empirical population" (Murray Webster and Sell 2007, 13). Concerning its internal validity design, the pattern of the experiment would rather be "single-blind", by which "the subject does not know the true hypothesis under investigation". These scholars explain that "if subjects do not know the hypothesis, they cannot act in ways to confirm or disconfirm the hypothesis" (Murray Webster and Sell 2007, 75) and this is crucial since the feedback had to be given in the most possible sincere way. The hypotheses to be tested were whether the participants would focus their attention on the *e-radio* or on the traditional radio broadcasting and how. Also, whether the *e-radio* idea could get good criticism from them in order to be considered as a possible successful product and make real the metaphor of a printed radio service. As it was assessed before, the subjects had to ignore everything concerning the *e-radio* project so their opinions after the experiment could be used to analyze the strengths and weaknesses of it.

Through the use of a questionnaire in the second phase of the sessions, on one side the challenge was to collect valuable information about how the subjects dealt with the prototype and how much they liked its functionality in order to improve or re-design the idea. On the other side, the challenge was to compare the effectiveness of this immediate short messaging technology in context of the direct competence with the spoken word of radio broadcastings, considered as a reference of study due to the explained conceptual similarities between both media. The questionnaire is almost totally qualitative, imitating the qualitative characteristic interviews of this scientific approach, that are considered by Marwick as the "basic tool of qualitative methods in a range of disciplines, including sociology, media studies, anthropology, and human-computer interaction (Spradley, 1979; Wengraf, 2001)" (Weller et al. 2014, 110) and that "can be an effective way to investigate normative assumptions about technology" (Weller et al. 2014, 113).

Finally, there are two last reasons for justifying the chosen methods of this thesis paper. Firstly, it is important to point out that the "conventional communication research on mass media effects" that "represents the dominant approach followed by mass communication scholars over the past 30 years or so" normally "involves an experiment or, especially in recent years, a survey on mass media effects conducted by

gathering data through questionnaires or interviews" (Rice et al. 1984, 82). This assumption highlights again the pertinence of this study in a yet unexplored field and the relevance of an experiment design with a qualitative approach. Secondly in that argumentation, that the "main elements in the design are a sample of users of the new technology from whom [the] data are gathered, often by means of personal interviews, both before and after the introduction of a new communication medium" as a "design" of "typical field experiment" where, afterwards, "the research findings can be utilized to improve the communication technology through its redesign". All of that because "when the users are providing formal evaluation feedback, or even reinventing the system, then system design, use, and evaluation clearly represent an integrated, ongoing process" (Rice et al. 1984, 82-84). And those are exactly, step by step, the characteristics of this "ongoing design process" that have been described whithin the current subtitle of this chapter.

3.3 Sampling and data collection

This audience research experiment employed a self-selection sampling process where the participants were selected according to the purpose of the investigation. The reason behind this criterion is actually the type of experiment. This is a small study with a very concrete goal that only needs a very specific and limited audience. The selection of the 15 participants was constrained only to media students to fulfill the requirements for the sake of the investigation. There is no attempt of generalization of the findings to the population so the feedbacks are not universally relevant. On the contrary, this sampling ensures a highly motivating contribution for the *e-radio* project because the reduced number of respondents and the more selective opinions can show results that can be used to improve the prototype later on.

Regarding the justification of the previous paragraph, Rogers points out that "the general lesson here is that individuals, (…) that participate in a communication technology experiment are very atypical of the population of potential users" and "instead, the users in such an experiment are usually typical of the early adopters of an innovation: information-rich and socioeconomically advantaged (Rogers 1983, in Rice et al. 1984, 87). This is very important because it is assumed as part of the sampling that specialized users or subjects are the ideal to test the prototype and find insights to prove

the hypotheses. Since they are generally the first adopters of a new technology regarding their field of study and also the greatest experts on topics relating to it, they were always the priority.

Furthermore, "one specific way in which initial users are not representative is illustrated by the concept of knowledge gap" until the innovation is socially widely adopted. In the case of the *e-radio* App, media students are required to participate in the experiment because for a based-on-Twitter tool "an individual must in general be a motivated information searcher" since "the information-rich are most likely to be the first adopters, as they are more likely to be computer literate" (Rice et al. 1984, 85).

Once these considerations about the sampling procedures of the respondents are made, it is time to address the data collection process and the data collection activity chosen for the methodology. In that sense, and according to Robert Yin, first of all, "if your data collection only consists of interviewing and conversing and your main interest is in knowing how people actually behaved in a given situation, your data will be limited to your interactions with a set of participants and their self-reported behavior, beliefs, and perceptions" (Yin 2011, 132). The second part of the sessions of the experiment consisted of inquiries asking the subjects about the news reception exposure that they had experienced with the prototype and radio broadcastings. For that purpose a questionnaire was designed because, as it was clarified before, the goal was to extract conclusions only from the provided answers of the participants.

The reason to use a questionnaire instead of directly interviewing the subjects was to "carefully script" the "interaction" with the participants so it can be argued that the method used is a "structured interview" where there is a "formal questionnaire" in order to "try to adopt the same consistent behavior and demeanor when interviewing every participant", also since in this kind of qualitative interviews "the interview's behavior and demeanor are therefore also scripted" as a "result of some earlier and study-specific training aimed at conducting the data collection as uniformly as possible" (Yin 2011, 133). Here the plan was to be neutral and stay away from direct interaction with the subjects. In that case, the validity of the experiment feedbacks could remain accurate in terms of equal opportunities to all of them, eliminating bias of re-asking questions sometimes, repetitions that could contaminate perceptions, or other mixtures

of personal insinuations to their opinions that were typically involved in conversational procedures.

Regarding the design of the questionnaire for the data collection, there is first of all a brief initial quantitative part. This was introduced with a double purpose. On the one hand, as it had been presented before, it must be taken into account that "every controlled experiment makes a number of important assumptions that can and should be checked" and "this means measuring possible confounding factors and then accounting for them in the data analysis" (Schrøder et al. 2003, 339). In this case, the questionnaire had some preliminary questions specifically designed to check if the subjects did "respond to the intervention in the same way" and did "watch" and/or heard "equally intently" during the news reception phase (Schrøder et al. 2003, 339).

Actually, one of the main concerns for the sampling of the data and the design of the prototype was to ensure that the understanding of the instructions was clear enough. The re-design of the software and questions during the testing sessions with friends showed the need for a short quantitative section which could confirm that everybody knew what to do and *how* to do it in order to avoid undesirable bias or mislead answers far from the goal of appropriated feedback to the prototype.

On the other hand, the quantitative part included questions about the degree of active usage of portable devices such as smartphones or tablets, and also about the frequency to log in social networks, particularly Twitter, among the participants. It was part of the strategy sampling to check that "users with similar equipment must be involved as respondents in evaluation of the new media" so they must be "equipped with compatible devices" (Rice et al. 1984, 85). This quantitative section was elaborated with "questions where interviewers are limited to a set of responses predefined by the researcher, otherwise known as closed-ended questions" (Yin 2011, 133).

The goal was to be able to classify the respondents in a quicker direct way between those who check Twitter very often and through which kind of device, and those who does not. The further comparison of the answers would indicate interesting conclusions depending of these factors that can be identified as variables. As Yin reminds, "closed-ended questions lead to more accurate data and a more definitive analysis" (Yin 2011, 133), which was the current target indeed.

However, the rest of the questionnaire employed “open-ended questions” where “the researcher tries to have participants use their own words, not those predefined by the researcher, to discuss topics” (Yin 2011, 133). The idea of these qualitative interviews is to “understand participants” based “on their own terms and how they make meaning of their own lives, experiences, and cognitive processes” (Brenner 2006, 357, in Yin 2011, 133). The data collection process here is about to “understand a participant’s world, which is likely to conclude concentrated efforts at mastering the meanings of the participant’s words and phrases” (Yin 2011, 133).

In order to sample correctly the data collection from the qualitative questionnaire according to the general plan, the open-ended inquiries followed some “hints” that were recommended in this sort of methods by Robert Yin. In that sense, the questions were formulated in “modest amounts” trying to incite the subjects “to extended dialogues in their part”; they were designed as “nondirective” as possible so the “goal” was “to let participants vocalize their own priorities as part of their own way of describing the world [the news reception exposure] as they perceive it”; and finally they were written “in a neutral manner” avoiding to “convey” my “own biases or preferences” that could “affect the participants subsequent retort” (Yin 2011, 136-37).

Thus, the reason to use a qualitative questionnaire as a part of the methodological plan has been justified before, but it is worth to repeat once again that “users might be interviewed about their habits and perceptions, but we also need to study their actual behavior, since there might be discrepancy between perceived (and ideal) actions and the actual lived practices” (Patriarche et. al 2014, 149). And as Yin says, “interviewing could rely on a fixed questionnaire” (Yin 2011, 131).

3.4 Clarity, problem solving and corrections

Clarity is a concept that deals with the internal and external validity of an experiment design. Although these terms will be explained further on in this paper, it is important to assess here that, according to Kuipers and Hysom, “while the development of procedures for experimental research and the implementation of the design often appear to be simple and straight forward projects, the steps involved are far more time consuming and complicated than one might expect” (Murray Webster and Sell 2007,

289). The experiment of this work is another great example of how a simple design had to be constantly adapted taking much longer time than expected to make the appropriate adjustments in order to avoid a lack of the mentioned validity.

Also, the characteristics of the scientific organization are part of the so called learning process. In this process there are several considerations that can be summarized in order to describe the re-design of the experimental methodology as well as the problem solving strategies employed to avoid undesirable biases.

First of all, Shane R. Thye talks about errors or "confounds that threaten" the correct development of any experiment design (Murray Webster and Sell 2007, 71). In that sense, the clarity of an experiment research is mainly in charge of finding and eliminating errors or confounds. A "confound exists when more than one thing is unintentionally manipulated in an experiment" so "if two factors are manipulated" it will produce "any change in the dependent measure" that "could change" these factors (Murray Webster and Sell 2007, 72).

Thye also classifies nine kind of confounds that can appear during a research. The scholar describes "history", "maturation", "selection", "selection-maturation interaction", "testing", "regression", "instrumentation", "experimental mortality" and "experimenter bias" as the most common ones (Murray Webster and Sell 2007, 72-75). "History confounds" deal with "factors" that occur through historical changes in the process. "Maturation" becomes confound if the subjects' "maturation process" affects the experimental sessions. The "selection" of the respondents can be confounded in case of recruitment of "groups on a nonrandom basis" so "selection biases exist". "Selection-maturation interaction" happens when "unique effects of maturation processes (related to time) and selection biases (related to personal characteristics)" can "interact in producing an outcome". There is a "testing" confound if "the prior measurement of a dependent variable can (…) cause a change in the future measurement of that variable". "Regression" means that "whenever repeated measures are taken, extreme scores tend to become less extreme over time because they move (or regress) toward the group mean". "Instrumentation" is the certain level of "unreliability that can cause the measurement of the dependent variable to change over the course of an experiment (Thye 2000)". An "experimental mortality" affects when "some individuals may drop out before the experiment is complete", however it "is not problematic (…) on a random basis". And

finally, the "experimenter bias" confound comes when researcher "expectations can influence subject's behavior in subtle ways (Rosenthal and Rubin 1978)" so the results are influenced by the experimenter desire (Murray Webster and Sell 2007, 72-75).

Not all of the previously explained confounds appeared during the current experimental research. The self-selection of the participants, for example, eliminated in advance the possibility of experimental mortality confounds. However, there were other errors that came up strictly in the design of the experiment that had to be addressed. In that sense, the main problems dealt with the schedule of the sessions due to the difficulties to arrange time for the respondents. The experiment was thought to take a couple of intensive days of work for the sessions, but the truth is that it had to be conducted through many other days during September.

The questionnaire also presented some confounds in the design that had to be solved. Initially, the first version was simply enormous. As a prime approach, it was built with 30 different questions among various sections which pretended to cover all the possible angles. Although this idea was good enough in terms of learning process to think about the most interesting inquiries regarding the feedback about the *e-radio*, it was quickly assumed that it came with two major problems. On the one hand, an evident combination of "sample size" and "time/space constraints" (Bermejo 2007, 147) that would have made that part of the sessions too long, boring for the subjects, and harder for the eventual data analysis due to the large number of extended qualitative answers. On the other hand, it had to be taken into account the "user's memory and in their willingness to collaborate" because "it is not possible to demand that users spontaneously remember" (Bermejo 2007, 147), especially if they were asked about many various things after their experimental trial.

After that, both the questionnaire and the prototype were modified step by step and adjusted in order to make their designs as much simple and clear as possible. This was possible after the necessary "testing", another important part of the scientific process. In the opinion of Kuipers and Hysom, "even when the experiment is only a slight modification of a set of standardized procedures, it is desirable to run initial 'practice' sessions" and "to assess other aspects of the instructions, pretest participants should be drawn from the same population as will be participants for the study itself" (Murray Webster and Sell 2007, 306). In the case of the prototype, the first testing

sessions with friends, relatives, and the thesis paper supervisor group, were disappointing. The structural feedbacks talked about a confusing staging and a too much fast experience since the news reception phase was originally designed with only one fast exposure – the weather forecast audio. It happened too quickly with almost no reaction time for the subjects to identify what was exactly going on. The words that were heard the most were that, in the opinion of the first testers, it was "stressing" and "confusing". In that sense, a second exposure with longer and calmer debate was included after the first one. Alongside, the colors employed in the PowerPoint slides used in the presentation software changed into a more relaxing and neutral scopes to facilitate the experience, as well as the upcoming messages display was also modified into a lower velocity of appearance.

Finally, other explanatory statements about what to do were included in the slides as instructions. The goal was to prepare the respondents effectively for the steps coming next at every time. The first testing sessions also taught how to conduct them from a more didactic point of view and helped me to understand the expected behavior towards the respondents that I had to assume as the responsible person of the experimental trials. This last consideration is important since, according to Kuipers and Hysom, "experiments, schedulers, and other laboratory jobs must be done by people designated for those positions" and "someone who is not a member of the research team cannot be counted on to do the job as it should be done" (Murray Webster and Sell 2007, 291). Thus, the whole responsibility was on me.

Simultaneously in the case of the questionnaire, the main problems with the first testing sessions were allocated in the accuracy of the questions asked. A lot of the inquiries were considered irrelevant or not directly associated with the goals of the research. Particularly, most of them were also too long to respond in effective ways regarding the experimental experience of the subjects. At the same time, many others had to be reformulated in order to eliminate misunderstandings and possible biases of error in the interpretation. In total, there were developed four different versions until the final approval of the supervisor. The target was always to re-define the statements and to reduce the size of the questionnaire as much as possible because it was constantly identified as a big challenge to ask open qualitative questions in written text. This is because the subjects usually do not feel so interested to give feedback with written word for a long time. Regarding that last problem, the idea was to suggest limiting the space

for them to answer with screed-lines that indicated the approximate amount of words needed for a proper response in each case. Also, in some of the inquiries, the statement had further instructions between parentheses to guide the respondents.

For a last consideration regarding the questionnaire, there were two main challenges for the validity of the data. The first dealt with the "lack of sincerity in responses or the bias in favor of what seems to be socially acceptable responses are problems with which many surveys have to deal" (Bermejo 2007, 148). For that reason, it was also very important that the subjects did not know about the real goal of the testing trial for the *e-radio* prototype. It was assumed that if the users ignored about a news App prototype behind their contribution, their answers about the functionality would be more focused in the kind of feedback requested. This decision is a way of "manipulation" called "deception" because it works by "deceiving the subject about the true nature of the study or its hypotheses" (Murray Webster and Sell 2007, 293).

However, at this point an important argument had to be made it: there were no ethical implications in this work since the information collected was not sensitive. The only dilemma was to strictly give information to the subjects about the objectives of their collaboration by at the same time preserving the secret about the real purpose of the prototype. This was crucial in order to be able to obtain honest feedbacks that were not conditioned by a previous knowledge of the conceptual idea of the *e-radio* App or any of their characteristics and nature. Pretending to manage that double nature, an initial statement was included in the beginning of the questionnaire and all the doubts of the respondents answered during the sessions. The statement was an information consent that was written in these terms:

> "Information consent: The following questionnaire is totally anonymous. It is a part of an experiment at the University of Oslo and the answers will be used only for research purposes based on that experiment."

The information consent guaranteed the protection of the data given by them and also their permit to participate in the process, described here by justifying the "deception" done. Without any doubt, it was totally necessary to deceive the respondents about the true nature of the study of the *e-radio* for the aforementioned reasons. According to Kuipers and Hysom, "one way in which deception is used in experiments is to prevent subjects from learning the true hypotheses" because "once

subjects are aware of the hypotheses they may not behave as they would without the awareness" (Murray Webster and Sell 2007, 293). This factor is critical in this printed radio research because if the respondents were told about the real plans of developing an App called *e-radio*, they could "consciously agree with the predictions and try to 'help' experimenters" or they could "disagree with the predictions and try to show experimenters how they are wrong" (Murray Webster and Sell 2007, 293). In that sense, "it is acceptable to use deception only if it has a specific purpose in the study, if it does no permanent harm, and if the benefits from participation outweigh any negative effects" (Murray Webster and Sell 2007, 294). That is the case.

The second challenge to accomplish was related to "confront the limited memory of human beings" because "surveys relay on people's memory" and sometimes "it is extremely complicated to remember in detail certain activities" (Bermejo 2007, 148). This fact involved many hours of careful re-design and thinking about how to exactly conduct the sessions. The principal concern was to avoid an overwhelming questionnaire that could have been understood by the subjects as a sort of memory test about their previous experiences in the news reception phase. In that case, it was strictly clarified in the statements of the PowerPoint slides more than once that there was no content to memorize. Thus, the respondents would not worry about this and could relax for a better perceptive task.

Finally, regarding the way how the experimental sessions went, it can be underlined that the direct contact with the subjects played a key role here. Kuipers and Hysom remind that the "experimental treatment begins when subjects first are contacted and consequently everything should be held constant except for the experimental independent variables" (Murray Webster and Sell 2007, 291). In that sense, everything was done pretending to give the same neutral treatment to all of the respondents, especially taking care of "normal interaction, such as greeting, asking how someone feels, commenting on the weather or on sports, etc." that can become "inappropriate because these things cannot be done uniformly for every experimental subject" (Murray Webster and Sell 2007, 291).

3.5 Qualitative interview analysis

Previously in this chapter, the methods involved in the experiment design, sampling strategy and data collection were discussed. In this section, it is time to describe the other method that completes this audience research experiment: the data analysis to extract the insights from the answers of the sampled respondents. It will be assessed together with the justification of the construction and design of the questionnaire.

The method followed to analyze the data is the qualitative interview analysis. This method is widely employed in many different qualitative studies and in some other mixed approaches such as triangulation. The qualitative interview analysis is defined as "the way of finding out what others feel and think about their worlds", helping to "understand experiences and reconstruct events in which you did not participate" (Rubin and Rubin 1995, 1). The *e-radio* experiment pretends to "understand" how the respondents dealt with the prototype during certain conditions of news reception that had been previously designed for the sessions. In that sense, qualitative interviews "are a tool of research, an intentional way of learning about people's feelings, thoughts, and experiences" (Rubin and Rubin 1995, 2).

For that purpose, a questionnaire is used in this small audience research experiment that "intentionally introduces a limited number of questions and requests the interviewee to explore these questions in depth" and "reflect, in detail, on events they have experienced" (Rubin and Rubin 1995, 2). In the current work, the event is the news reception phase of the *e-radio* testing. The questionnaire was structured in three different "blocks of questions" in "a logical sequence" where "the research questions are converted into topics which may be raised in the interview and into questions that may be posed" (Mason 2002, in Boeije 2010, 67).

Qualitative interviews are very useful for this research because they can "explore scientific topics, events or happenings" (Rubin and Rubin 1995, 3) and "evaluate all kinds of projects and programs, whether for social reform or managerial improvement" (Rubin and Rubin 1995, 4). In this particular case, the questionnaire of the experiment will allow to find out conclusions, understandings and possible improvements regarding the viability of the *e-radio* gadget. The goal stated in the second research question is to comprehend how the audience interacted with the prototype and the questionnaire will

give answers from the respondents “to find out what is going on, what people do what they do, and how they understand their worlds” so “with such knowledge you can help solve a variety of problems” (Rubin and Rubin 1995, 5) related to the *e-radio* design.

In this audience research experiment, a type of questionnaire called “topical interview” is used because the purpose is to “learn about particular events or processes” and “find out” the way a “program is run” (Rubin and Rubin 1995, 6). The challenge in this method was always “to customize what is asked to each interviewee” (Rubin and Rubin 1995, 11). For that reason, the method to extract findings from the subjects’ experience was a written questionnaire. Doing so, the questions remain always the same for all the 15 informants. The reason behind this was to avoid confounds or biases derived from the interviewer since all the participants did receive the exact same inquiries during all the sessions. The key factor with this method is to understand that most of the answers “are examples that people provide to explain what happened or describe events in their lives, trying to make us see the world the way they do” (Rubin and Rubin 1995, 24). That is very important because the feedbacks come from a highly specialized audience and they are actually the ones who must report about the first version of the *e-radio* directly compared to the radio broadcastings. They are the target public for the gadget when it will be launched, so their considerations can help to re-design it the best possible way for its success in the future.

Before, it was said that the questionnaire can be named as a “topical interview” but the definition is still incomplete. It is also a so-called “evaluation interview” because it aims to “learn whether new programs, projects, or other types of intentional changes are living up expectations” (Rubin and Rubin 1995, 27). The goals of this experiment are very specific and clear, “focused on a particular event or process”, that in this case is to test the *e-radio* prototype directly compared with radio broadcastings, and also more “concerned with what happened” trying to extract “explanations” and “descriptions of processes” (Rubin and Rubin 1995, 28-29).

For this purpose, the method of analysis “may sort out and balance what different people say, especially if they are contending interpretations of the same events” so this “is often based on the interpretations of the researcher” and “the researcher creates his or her own narrative based on this analysis” (Rubin and Rubin 1995, 30). Thus, according to “Berger and Luckman”, the followed approach is the

“interpretative approach” that consist not of “categorizing and classifying, but figuring out what events mean, how people adapt, and how they view what has happened to them and around them”. Hence, “there is not one reality out there to be measured; objects and events are understood by different people differently, and those perceptions are the reality –or realities– that social science should focus on” (Rubin and Rubin 1995, 34-35).

In order to do the analysis, several steps must be followed. The “purpose of the data analysis is to organize the interviews to present a narrative that explains what happened or provide a description of the norms and values that underlie cultural behavior” (Rubin and Rubin 1995, 229). In that sense, after reading the answers given by the subjects that tested the *e-radio,* the first step was to do the coding. Through the coding, “we code the material to group similar ideas together and figure out how the themes relate to each other” (Rubin and Rubin 1995, 229). This is the “process of grouping interviewees’ responses into categories that bring together the similar ideas, concepts or themes” Rubin and Rubin 1995, 238).

According to Herbert J. Rubin and Irene S. Rubin, the technique at this point was to search carefully for “explanatory concepts by picking out the words the interviewees frequently use”, both those “that sound different from your ordinary vocabulary” or those “concepts”, being “nouns or noun phrases”, that “are repeated frequently and seem to be expressing an important idea”. Eventually these concepts were categorized as “labels” that are the important categories. At the same time, “when you are looking for underlying meanings and themes, it can be useful to pick out and analyze stories”. Usually, an “extended response that seems not to speak to the questions” presents a “disjunction between” what had been asked and the answer that can be “a story” and these can present new topics or “lessons” (Rubin and Rubin 1995, 230-33). This experiment presents partly the three circumstances in the analysis that will be introduced and explained in the next chapter.

The coding of the analysis was done “in stages”. Firstly, “a few main coding categories, suggested by the original reading of the interviews” were put into a “list”. Later on, the data had to be “sorted” and defined “into the categories you chose”. Secondly, when it was discovered that “important information” did not “fit into these categories” or that some of them distorted “two or more separate concepts, themes, or

ideas", then categories were changed or new ones added so "the material already examined" went to a "recode" process. Thirdly, "once you have all the material that belongs together in the same place, you can analyze the material within and across categories". The final stage of the technique was to "refine" the material and set up findings about "what a concept means, compare examples of a theme, or piece together the separate events in a narrative" (Rubin and Rubin 1995, 239).

These stages of the coding process regarding the qualitative interview analysis will be explained with more details in the next chapter together with the findings. The subjects evaluated the *e-radio* in different ways but still the data amount was small due to the characteristics of the experiment. For this reason, the coding is included in the next chapter to illustrate how the method was pertinent for the analysis.

Last but not least, all the methods of this experiment investigation were done manually without any computer software helping to analyze the data. The reason behind this was to ensure that the theoretical sensitivity could be manifested and guaranteed for the sake of the qualitative conclusions because "the computer cannot do the creative part of coding, such as setting up and modifying the categories and figuring out in what categories each segment of an interview belongs" (Rubin and Rubin 1995, 241). It is understood that "there are many such software programs" that are "specifically designed to assist in analyzing qualitative data" (Yin 2011, 179), but the desire has always been to study the answers from a very personal perspective since the prototype and the kind of research is a very unique and personal too. It is thought that there is nothing or nobody more ideal than the author of this project to read and interpret correctly the feedbacks regarding this –my own– creation. Thus, the control of all the information without computer random biases or unread patterns was the goal to be achieved.

3.6 Validity and generalizability of the experiment

Validity and generalizability are important terms since "every audience assessment methodology represents (…) advantages and drawbacks" (Bjur 2009, 102), and, according to Jakob Bjur, if "reliability of data is regarded as sufficient, the more interesting question is that of validity: are we measuring the right things?" (Bjur 2009,

102). This audience research experiment aims to get very concrete results concerning a very particular issue. The validity and generalizability are explained below.

First of all, the validity refers to a couple of dimensions regarding the development of an experiment research. Hence, Shane R. Thye defines by one side the so called "internal validity" as "to the extent to which a method can establish a cause-effect relationship" and it allows scholars to fight against threads such as "confounds" that, as they were explained before, happens "when more than one thing is unintentionally manipulated" (Murray Webster and Sell 2007, 72).

In this small experiment, the "experiment design employs the strategy control as the key tool of validity" meaning not "only" the "manipulation of the subject, but rather to the various ways that a researcher can account for all the sources of error in the inquiry process" and "ultimately based on the desire to make different subjects' experiences of media comparable" (Schrøder et al. 2003, 342). In that sense, the methods for the experimental sessions explained how the respondents dealt with the prototype in particular conditions of news exposure and how it affected the validity of the process. That designed procedure as well proved how "by pre-selecting the media content and ensuring all subjects see it, we can reduce the uncertainty associated with diverse viewing patterns" and "by ensuring the exposure is of constant duration and viewed in similar context, we become more confident that it is the subject's relationship to the content that matters" (Schrøder et al. 2003, 342).

The validity of the experiment was also justified through the experiment design since "the analyst must systematically and carefully describe all steps in the analytical process, including the researcher's pre-understandings of the issues, and specify exactly what was done and how" (Schrøder et al. 2003, 353). In reference to the data analysis, the validity was justified by affirming that "all analytical point must be supported by extensive illustrative quotations from interview transcripts" (Schrøder et al. 2003, 353).

One the other side, Shane R. Thye talks also about another dimension of the validity that is known as "external validity" and that "refers to the degree that experimental findings hold for other persons, in other locations, at other times" (Murray Webster and Sell 2007, 81). In that particular sense, Morris Zelditch is in the opinion that external validity implies "the validity of generalization from experiments" (Murray Webster and Sell 2007, 87).

That final term is what links with “generalization” as the experiment “connects” with “naturally occurring phenomena” (Murray Webster and Sell 2007, 82). However, the truth is, according to Thye again, that the current research has “low external validity” in the way it was assessed before, and that means that here there is a “limited utility to understand events in the real world” since “the laboratory is an artificial environment” and the “laboratory results cannot directly generalize beyond the laboratory” (Murray Webster and Sell 2007, 82). This conclusion is related to the qualitative approach of the study. The goals are focused in a very specific set of responses that will serve for further investigations rather than universal conclusions.

Regarding that fact, Robert Yin explains that “by its very nature, qualitative research is particularistic” and “understanding the nuances and patterns of social behavior only results from studying specific situations and people” (Yin 2011, 98). He argues that “yet, most studies can derive greater value if their findings and conclusions have implications going beyond the data collected – that is, the extent to which the findings can be ‘generalized’ to other studies and other situations” (Yin 2011, 98), but again that is not the prime goal of this audience experiment. According to Marwick, “generalizations made about one (…) network of users may not apply to another, providing only a small portion of the picture”, and from that perspective, “qualitative research allows scholars to investigate the practices of a particular user group” or “to include more sources of input about a specific community or user segment” (Weller et al. 2014, 110). In this work, the “inputs” are the feedbacks to improve the *e-radio* project while the App would become the “user segment”.

Finally, the “users of new communication media often are not representative of the population of future users, so research results cannot be generalized to the wider population” (Rice et al. 1984, 85). And that is exactly the aim of the *e-radio* experiment. It was not desirable here “to make generalizations about the whole quilt of the audience, but only to do a gentle comparison of a few patches” and “moreover, to generalize about audiences” is not a good idea “because it may serve to the purpose of containing and controlling the audience in the interest of commercial communicators” (Schrøder et al. 2003, 354). Rather than that, the real purpose of this experiment has to do with the fact that “qualitative audience researchers” should “always view their object through a ‘lens’ that is alert to the discovery of tendencies, categories and types, even with very small numbers of informants” (Schrøder et al. 2003, 354).

4. FINDINGS OF THE EXPERIMENT

This chapter presents, examines, and discusses the data analysis of the *e-radio* audience research experiment. In the first subtitle, the first research question and the first hypothesis are replied using a quantitative analysis of the answers given to certain inquiries of the questionnaire. In the second subtitle, the second research question and the second hypothesis are replied through the interview qualitative analysis method that was explained before. In this last section, the coding technique is described and discussed to enlighten the scientific process of the experiment.

4.1 Findings regarding the RQ1 and the H1

In the current work, the goal was to test the prototype of a new journalistic gadget or App called *e-radio*. This prototype imitated Twitter short text messaging inspired by the immediacy of the network. The experiment designed the *e-radio* running simultaneously with radio broadcastings during two different news receptions exposures. Under these circumstances, the selected participants had to decide on which information output focus their attention to get informed. Afterwards, the mission was to answer a questionnaire with qualitative inquires about what they had experienced in those exposures, and a few quantitative questions about their habits with media and social media, in order to get more extra insights regarding preferences and uses.

This first section of the chapter is in charge of the latter analysis. The goal at this point was to give reply to the first research question –RQ1– and the first hypothesis –H1– of the study. The RQ1 asked whether the audience would prefer to focus their attention on the reading offered by the *e-radio* prototype rather than to listen to the radio audios. This research question connected with the quantitative approach of the questionnaire. It pretended to determine the impact of the *e-radio* among these users in a context of direct competence with radio bulletins. This was set up this way because the immediacy of the service was seen as the main goal to be achieved, and the radio broadcastings were considered the approach for the new network. Meanwhile, the first hypothesis or H1 stated that those respondents highly familiarized with the use of Internet portable devices such as smartphones and tablets would prefer to focus their

attention on the *e-radio* prototype rather than to the audio broadcastings. The data analysis aimed here to test the strength or weakness of this formulation.

The questionnaire of this audience research experiment was already explained and justified on the previous pages. It had two different sets of questions: those from a quantitative approach and those open inquiries that responded to the main qualitative goal of the work. According to Herbert J. and Irene S. Rubin, this was desirable because "many qualitative interviews have both more structured and less structured parts but vary in the balance between them", where the "less structured parts" concentrate "most of the talking, perhaps explaining what an idea, event, or bit of background means", and where the "most structured portions" come with "specific questions to get detail, example, and context" (Rubin and Rubin 1995, 5-6).

In this section of the chapter, the quantitative parts of the questionnaire were stated to "get detail, example, and context" of the users' habits regarding media, social media, and portable devices. Particularly, the interesting information here was to determine three aspects. Firstly, how was the frequency of listening to the radio compared with reading news in the media. Secondly, how was the frequency of Twitter usage and particularly how often they followed the news through the social network. Thirdly, how often the subjects did those activities employing portable devices such as smartphones or tablets rather than the computer. The purpose here was to find out answers to reply the RQ1 and to strengthen or weaken the H1 of the experiment.

4.1.1 Data analysis to answer the RQ1

Regarding the first research question, RQ1, it asked the following: *Will the audience prefer to focus their attention on the reading offered by the e-radio prototype rather than to listen to the radio audios?*

The inquiry pretended to find out whether the respondents decided to mainly follow the *e-radio* or the radio broadcastings in order to get informed during the news reception phase of the experiment. For that purpose, there were two questions designed to include a quantitative approach in order to easily determine this information. These two questions, #13 and #14, were the ones that asked directly about the news reception experience in both exposures A and B. The theoretical concepts were considered to design the formulation of these questions. Special focus was taken in terms of how the

participants could frame the stories presented. Also, according to McLuhan, the purpose was to check if the respondents would focus their attention in a "cold" or "hot" message. The final goal with the RQ1 was to understand if the functioning of the *e-radio* was able to generate more interest in the respondents than normal traditional radio when following the news live. Thus, the experiment at this point wanted to demonstrate if the *e-radio* could be interesting enough for respondents in direct competence with traditional radio formats.

Question #13 stated: *"How was your experience during the news reception phase in the Exposure A?"* It contained a set of pre-determined answers among which the subjects had to pick one and later explain the reason for taking it. Since the RQ1 is looking for a quantitative response, only the results of the pre-selected options are taken into consideration for this first analysis. The results show the following:

The option *"I tried to focus in the audio output but many times got distracted by the texts. Overall, I still listened more than I really read"* was picked by four people. The option *"I was paying attention sometimes to one output and sometimes to the other. However, I did not understand correctly what was going on"* was picked by three people. Then, three pairs of subjects picked the following three options: *"I attempted to focus on the textual output, but many times got distracted by the audio. Yet, I was rather reading than actively listening"*, *"I was paying attention sometimes to one output and sometimes to the other. Doing so, it was alright to understand what was going on",* and finally *"I wanted to read the textual and I was ready to do it, but eventually changed my mind and listened to the audio".* The other two respondents selected the option *"I wanted to listen to the audio output and prepared myself for that, but eventually changed my mind to read the texts"*, and the option *"I could not really focus on anything during the whole time. It was too difficult and confusing to follow any output"*.

Hence, the preliminary results regarding the Exposure A from a quantitative approach show a preference of the subjects to focus their attention to the radio broadcastings rather than to read the texts of the *e-radio*. Also, it can be concluded that some users tried to follow both information outputs simultaneously with different degrees of success. There was only one of the respondents that eventually decided to focus on the *e-radio* in the first slide of the news reception phase. Hereby, the

respondents showed a preference in the "hot medium", with "less active participation" (McLuhan 1964, 22-23).

Meanwhile, question #14 asked *"How was your experience during the news reception phase in the Exposure B?"* Exactly like in question #13, this inquiry came with the same set of pre-determined answers among which the subjects had to pick one and then explain the reason for taking it. The results of the test show the following:

The favourite option, chosen by five respondents, was *"I was paying attention sometimes to one output and sometimes to the other. Doing so, it was alright to understand what was going on"*. Then, the option *"I only listened to the audio and ignored completely the texts. And I managed"* was selected by three people. Six subjects decided to pick these three options, two subjects each: *"I was able to follow both the audio and the textual outputs simultaneously during the whole time. I am multi-tasked!"*, *"I only read the texts and totally ignored the audio. And I could concentrate"*, and *"I tried to focus in the audio output, but many times got distracted by the texts. Overall, I still listened more than I really read"*. Finally, only one respondent marked the option *"I wanted to listen to the audio output and prepared myself for that, but eventually changed my mind to read the texts"*.

Here, the results regarding the Exposure B from a quantitative approach show a preference of the subjects to focus their attention in both information outputs simultaneously. Again, a group of them favored the radio listening compared with the reading of the *e-radio* messages, whereas there was only one respondent that eventually decided to focus exclusively on the *e-radio*. However, this behavior changed a little from the first exposure and turned into what McLuhan would define as a "more participative" information process. That fact would allows us to redefine the experience into a "cold" medium new reception (McLuhan 1964, 22-23).

Consequently, regarding the RQ1, the participants of the experiment in general preferred to focus their attention rather on the radio than on the *e-radio* during the news reception phase. In the Exposure A, more people decided to focus on the listening and a few attempted to concentrate in both outputs simultaneously, whereas in the Exposure B more people tried to follow radio and *e-radio* at the same time and some other to rather listen than to read. This changing interaction proved the framing theoretical approach

because the participants looked voluntary for a different "communicator" that framed the information process (Entman 1993, 52).

The answer to RQ1 is hereby: *no, more people preferred either to try to withhold both radio and e-radio simultaneously or to focus on the radio bulletins rather than to the text messages exclusively*. Some particularly interesting behaviors exemplified this answer during the experiment sessions. For instance, some of the respondents decided to close their eyes after the first exposure in order to keep focused on the audios. This fact occurred in different days with different people who did not know about the others. When they were asked about this at the end of each session, they surprisingly agreed to explain that they were looking for more comfort and less stress to follow the radio's "hot" message.

These facts mean that the *e-radio* did not arouse more interest itself than the traditional radio output. The complementary qualitative responses that help to contextualize these findings will determine the causes of this behavior. They will be analyzed in the second section of the chapter.

4.1.2 Data analysis to test the H1

Regarding the first hypothesis of the research, it stated that *those respondents highly familiarized with the use of Internet portable devices such as smartphones and tablets would prefer to focus their attention to the textual reporting of the experiment.* In that sense, the questionnaire began with an initial section or "Section A" called "personal considerations". In this first part, there were some questions to consider for this analysis to get extra background about habits and preferences of the sampled respondents. Before in this chapter, three aspects were described to measure the strength of this H1. These aspects relied in the tradition of uses and gratifications experiments that inspired the design of this audience research experiment. These aspects are now put into the perspective of the given answers.

The first aspect was the frequency of listening to the radio compared to reading the news in media stories. For that purpose, questions #3 and #4 asked for preferences in traditional and online media. According to the results of the test, in terms of reading the news, almost all of the subjects declared not to take newspapers –only three read traditional newspapers a minimum of several times a week– but to actively consult

"online newspapers, blogs or similar news portals" –only one subject does this less than once a week–. In terms of listening to the radio, only five of the respondents declared to listen to the radio bulletins at least a minimum of "several times a week" and the same happened with "radio news via different online services (podcasts, radio station websites, apps, etc.)". Thus, it can be concluded that there was a preference in the users to read news rather than to listen to them.

The second aspect wanted to figure out more about the frequency of Twitter usage and particularly to follow the news though the social network. For that purpose, questions #5 and #6 of the questionnaire asked for these habits regarding social media. The only goal was in fact to extract information about Twitter habits. It turned out that only two of the selected subjects log in Twitter at least a minimum of several times a week and only one of them employs the social network to read the news. Thus, it can be concluded here that generally the sampled respondents were not familiarized with Twitter or Twitter tools.

The third aspect aimed to check what type of device was the first option for following the news and also for logging in social networks. For that purpose, questions #7 and #8 wanted to rank the order of preference regarding the chosen device. The results showed that eight subjects preferred the smartphone for checking the news, exactly the same number of respondents that marked it as the first option to log in social networks.

Consequently, in order to measure the strength of the H1, these findings had to be crossed with the results found to give answer to the RQ1. In that sense, only six of the respondents preferred the smartphone as the first option for both activities: media news and social networks. And regarding this group of people, only two of these subjects focused their attention in the *e-radio* during the Exposure A, and only one of them decided to finally focus on the *e-radio* in the Exposure B. Those were very poor numbers given by the experiment to enlighten the strength of the first hypothesis.

Hence: *the H1 has turned to have weak support.* The findings from the answers to these questions showed relevant results that tested negatively the formulation. The respondents manifested a preference of reading news rather than to listen to the same news on the radio. Also, there was a considerable group of the respondents with a preference for using portable devices, particularly the smartphone, when they are

involved in some news consuming activities. However, and surprisingly, almost none of them declared to be active users on Twitter or even were familiarized with the functioning of the social network. In addition, an insignificant number of those who preferred the smartphone to follow the news or log in social media showed bigger interest in the *e-radio* than in the audios of the news reception phase. The experiment has supported the weakness of the H1.

4.2 Findings regarding the RQ2 and the H2

This section of the chapter is in charge of the data analysis that gives reply to the second research question –RQ2– and the second hypothesis –H2– of this study. However, contrary to the analysis in the previous section, there is here a qualitative approach that uses the qualitative interview analysis method to interpret the rest of data from the experiment sessions. This method "allows us to share the world of others to find out what is going on, what people do what they do, and how the understand their worlds" while helping to "solve a variety of problems" (Rubin and Rubin 1995, 5).

This section, thus, emphasizes the coding process of the answers given to the qualitative inquiries of the questionnaire. As it was explained before in the methods chapter, the idea was to look for "themes, concepts, and ideas" but also "names", or "projects, dates or steps of a process, or just about anything" that "might be useful in trying things together". The eventual goal was to be "putting" everything that has been coded into "a narrative together" (Rubin and Rubin 1995, 241). In that sense, the coding process had different steps that were discussed before and that can be found extensively detailed in the appendices. These steps were: first, to list the repeated words, concepts, or ideas into coded categories; second, to "re-code" the categories with the right data; third, to analyze the material across the final categories; and finally, to refine the material into a narrative meaning.

According to Herbert J. Rubin and Irene S. Rubin, the "coding process" of the qualitative interview analysis is "a two-stage process of thinking about the data" where "in the first, you examine and compare the material within categories" and "in the second, you compare material across categories". They explain that "once you find the individual concepts and themes, you have to put them together to build an integrated

explanation" (Rubin and Rubin 1995, 251). Also, the "pattern" to present the findings in the report shapes "a narrative line" which "unravels a problem or process step by step or event by event, building to the conclusion of what happened, why, how and when" (Rubin and Rubin 1995, 259). The "approach" followed to do the report presentation in this paper "organizes the writing to show how" the "findings illustrate the logic of" the "original design" (Rubin and Rubin 1995, 260). This was important to remind in this chapter because the "final reports" of that qualitative analysis will be discussed soon.

4.2.1 Data analysis to answer the RQ2

The second research question of this research asked: *How did the audience experience the news reception exposure of the experiment and which reasons influenced the selected strategy?* Hence, the RQ2 wondered about two different processes in fact. Firstly, *how* the respondents experienced the news reception phase of the experiment. Secondly, *why* they did it in the way they did it. This inquiry links with the qualitative part of the questionnaire and was looking for qualified opinions, understandings, criticisms or new ideas that could shape valuable feedbacks to improve the *e-radio* and help the project to move forward in the best possible direction to be further developed and commercialized. For this reason, highly specialized respondents were summoned to participate in the sessions because they were considered the target public for the type of services that the *e-radio* could give.

In order to prepare the questionnaire, the theories employed helped to design the inquiries used to give reply to the RQ2. Particularly, the framing approach gave the tools to understand "what aspects of the selected reality" told in two different ways were favoured by the subjects or had more "salience" for them. Entman's theory, thus, was crucial to understand the *how* of findings to this inquiry during the *e-radio* experience. Regarding the *why* process asked by the RQ2, Lippmann had said "how easily facts could be distorted and suppressed in order to influence public opinion" (Press and Williams 2010, 70). The Lippmann's theoretical concept of "metaphors" was very important to understand the final reports because they are based in the explanations of the respondents to express their experiences during the experiment sessions. These metaphors, according to Lippmann, told us "the unseen" media "environment" created by the prototype "chiefly by words" (Lippmann 1997, 42).

As it was said before, the questionnaire had a few purely quantitative questions already discussed, but most of them included a qualitative section too or were totally open inquiries. This section examines exclusively that qualitative part. In order to make the data analysis as clear as possible, the results produced by the coding technique will be explained regarding the two processes asked by the RQ2.

First of all, regarding *how* the audience experienced the news reception phase in both exposures of the experiment, questions #13 and #14 were exclusively designed to produce results that could explain that process. These questions stated: *How was your experience during the news reception phase in the Exposure…?* They both had a set of pre-selected options that were already discussed in the previous section of the chapter regarding the RQ1.

The qualitative analysis of these questions gave many different responses in the data material, but four main preliminary themes were discovered after the coding. Firstly, the audience pointed out that the *speed of the speech* was a crucial factor to decide the output of attention. The *e-radio* was generally seen as much slower than the audios, but whereas some of the respondents liked this fact, others found it annoying. Secondly, the audience matched a *preference to find the biggest possible amount of information* for the comprehension of the stories during the news reception exposures. Thirdly, it was highlighted by many respondents the *noise difficulties or the distracting influences* produced by the oral speech given in the radio output, which was an indirect positive characteristic for choosing the *e-radio*. Finally, the audience also agreed on paying attention to both outputs for a *better understanding because they were seen together as complementary messages* of the stories.

The differences in the speech referred back to the McLuhan discussion about the characteristics of the written and spoken message. The experiment findings showed at this point how the *e-radio* prototype favored "the inclusive participation of the spoken word over the specialist written word" and how it "transformed the sender, the receiver[s] and the message" (McLuhan 1964, 82- 90).

Consequently, the experiment enlightened some reasons that explain this process and these reasons can be also taken into account for future re-designs of the *e-radio* prototype. At this point of analysis, some contradictions were found too. According to Rubin and Rubin, the first consideration regarding them was to figure out "any logical

way of reconciling the contradictory foundations" and, "if the contradiction will not go away", to "find out which version to rely on" and "then see if other internal evidence helps" (Rubin and Rubin 1995, 252). This strategy was followed several times. The final report of the coding concluded *how* the audience interacted with the *e-radio* and radio audios in the following way:

> First, the subjects were looking for the biggest possible amount of information in order to understand the stories. There were some contradictory opinions here about which output, radio or *e-radio*, was actually offering a more information access. However, it looks like the choice was indistinctly made under the pretext of getting as "many things in depth" and "details" as possible. All of them were seeking for a "richer" and "more complete" message, no matter the output to which they focused their attention. That is what they wanted during the experiment.
>
> In that sense, they all realized that "the text and the audio were not matching all the time", but they all immediately understood that both outputs were telling the same story. For that reason, the most followed strategy during most of the time of their experience was to focus to texts and audios indistinctly. Then, both outputs became for them "complementary" messages for a common purpose of getting a "better understanding" of the stories. They together were seen as "helpful" to "enhance the understanding" and many attempted "to combine" them to achieve a greater comprehension. Particularly in these situations, the respondents said that the *e-radio* texts gave "easy" knowledge of "the news anchor", like if they were a "support" and "extra help to try to understand the context". The conclusion at this point is that the texts were interpreted as a secondary element of information behind the audio, which was associated as the news main thread. They even considered that the *e-radio* "reinforced the message being transmitted" and helped them to figure out the right news items when they became lost.
>
> Second, the subjects generally considered that the audio was more "distracting", carrying more "difficulties" associated with noise and stress to get the right information. They were contradictory opinions here too about which output was easier to follow. However, the logic of the answers crossed among the other found themes clarified the contradiction. The logic reveals that the respondents talked sometimes about the texts as a more stressing output only because they meant that the texts had come combined with audio simultaneously. This fact confirms at the same time their preference for the reading: "it was not possible for me to not be distracted by the audio messages". They declared in general that the "bigger effort" was put in the audio listening.
>
> Finally, the speed of the speech was seen as a determinant factor during their news reception exposure. In the exposure A the velocity of both texts and audios made more difficult the response of the subjects to the story, whereas some of them complained about the "slow buffering speed of the texts" compared to the quickness of the radio bulletins in the exposure B. Thus, in the first part the opinion is that they "had no opportunity to read it carefully" – one of the advantages

of reading that they like the most according to previous answers. In the second exposure, the general opinion is that the "text speed" was "extremely slow", even seen as "a tortoise".

The second process asked by the RQ2 was *why* the audience experienced the news reception phase in the way that was described before and which reasons influenced the selected strategy. In this part of the analysis, there were four questions designed to collect results that could explain the phenomenon.

Firstly, the question #9 asked: *If you were very interested in a particular news story, what would you choose to do between these two options?* In order to answer to this question, the two options given were: *to read about the news story* or *to listen to it on the radio*. The former was picked by 14 respondents whereas the latter only by one person. The goal with this question was to find out insights about news reading and news listening habits of the respondents. These insights could become interesting to re-design the *e-radio* gadget based on the given user preferences.

After the coding was done, three main preliminary themes were categorized based on repetitions in the given answers. Firstly, the respondents generally agreed to have a *more frequent reading habit* than a habit of listening to the news in the radio. Secondly, they mainly affirmed that the *reading speed* was seen as an appreciated fact compared with radio listening. Thirdly, there was a recurrent coincidence in the answers regarding a *more and more comfortable information access* when they read the news.

Consequently, the question #9 produced some insights to answer the RQ2 regarding the possible reasons that influenced the respondents to select their strategy in the news reception phase of the experiment. These reasons are related to the news reading and news listening habits of the audience. The results of the test can assist here to successfully re-design the *e-radio* based on user preferences and gratifications. The report of the coding process for this question concluded that:

> The subjects declared that they have a more frequent habit of reading the news than listening to them on the radio. Many of them were explaining that they are "more used to read" news sites or newspapers at least more than twice a week. At the same time, many assured that they "barely listen to the radio" or even that they do not listen to it "at all" but only for some very specific moments such as "listen to music programs".
>
> The subjects also declared that they appreciate to find information quickly and the reading allows them to get well-informed faster than the radio bulletins. The explanations pointed out that

the habit of reading permits them to select the information item that interest them the most –"to extract the main points"–, and go quicker and more directly to them without having to actively listen to larger speeches. Thus, they focus their attention personally to the most interesting parts.

In that sense, the subjects also agreed on the reading habit as a more relaxing activity than the listening in order to find information. To read makes them able to go back and forth in the written speech and to "find related information using links". Eventually, this two highlighted factors provide, in their opinion, an easier exercise to discover the news stories that is "less stressful"; and also gives a "better understanding", and a "richer", "more detailed", and "deeper" knowledge about the current information.

Secondly, questions #10 and #11 asked about the attention given to dynamic pieces of text information when watching video and audio on a screen. The former stated: *Have you ever watched the news on TV or on the Internet and become distracted by upcoming headlines running in the lower part of the screen?* The latter inquired: *Have you ever watched a film in a foreign language with subtitles and eventually paid more attention to them than to the movie action?* Both questions had several pre-selected options and the most picked one in the two of them was: yes, sometimes (10 subjects answered to it in #10 and 13 respondents in #11). The goal with these questions was to get insights about how and why the users sometimes follow dynamic text messages while audio and video are running simultaneously in the same activity. Later, these feedbacks can be used to implement improvements in the *e-radio* functioning. For that reason the coding analysis is presented together for #10 and #11.

There were found four main preliminary topics after the coding of the data regarding these two questions. Firstly, the respondents pointed out an *interest preference* or a predilection to follow those information items that interest them the most. Secondly, they concurred to say that dynamic text messages give them *more information access* to get well informed. Thirdly, many of the respondents agreed on a common *need for clarity* that is given by these types of immediate dynamic texts. Finally, they highlighted again that they have a *more frequent reading habit* that helps them to focus on these text messages when they run on a screen.

Therefore, questions #10 and #11 gave new results to reply the RQ2. They are based on how the audience dealt with dynamic text messages such as subtitles or live news headers during video and audio receptions. By asking the respondents about these habits, the goal was to obtain new ideas about preferences and interests on this type of

messaging for further tools to incorporate in the *e-radio*. Thus, regarding the RQ2, other reasons that influenced their selected strategy during the news reception phase of the experiment are explained were included in the final report of this coding:

> Firstly, the subjects talked about a preference based mainly on interest. The dynamic text messages such as headers or subtitles are ignored and even found a "waste of time" when the information given does not interest them. They "can pay attention" when these messages tell them "incoming news" that they "would like to follow". When these dynamic texts are interesting enough, the respondents agreed on the more access to deeper information that they provide. According to their understanding, these active texts come with "more information per second" that is more detailed "in terms of dialogue and meanings". Thus, they can access to more information items and get a great knowledge about the facts.
>
> Secondly, these messages are followed by the subjects when there is a need to correctly understand the phenomena to which they are related. Particularly in the case of subtitles, they consider that a better comprehension of the speech comes with them. In these situations, the headers and subtitles eliminate language problems and other "difficulties". They keep them "up-to-date easily" and even give "more context" to follow the "plot" or "main news thread". They are seen as "helpful" for the clarity of the general message sent.
>
> Finally, the subjects also believe that their more frequent reading habit makes them "to tend to read" and focus their attention to these messages even when "there is no need to understand 100%" a story being told. That happens, according to them, because they are so used to read that "wherever there is a text it is difficult not to read it".

Finally, the question #15 asked to the respondents: *If you could repeat the experiment, to which output would you like to focus your attention next time?* The purpose here was to get extra insights about the experience of the respondents with the *e-radio* prototype. Precisely, the idea was to complete their impressions with other new opinions that might have been added in questions #13 and #14 if they had another chance to deal with the exposures and imagine other possibilities. The answers could be seen as proposals for the improvement of the *e-radio*. In this question there were three pre-selected options. In total, 10 people declared that they would focus in the radio, 4 people in the texts, and one person that would attempt to follow both of them.

The results of the coding produced three main preliminary topics. Firstly, the audience coincided in pointing the preference to achieve a *more information access* in the decision of taking one output or another. Secondly, the respondents agreed to say that *the audios were more distracting* than the up-coming texts during both exposures.

Finally, the *complexity and the preciseness of the messages* influenced their strategy too.

Regarding the RQ2, the question #15 produced some extra results to complete the responses given by questions #13 and #14. These extra insights found after the experiment are used as proposals for the improvement of the *e-radio*. They contributed to contextualize the motivations behind the experience of the audience. The final report of the last coding said that:

> The subjects summarized unconsciously many of the previous conclusions in the answers to this question. Again, they believe that the bigger information access remains in the texts. However, they agreed on the very basic display of the text messages of the *e-radio* and the absence of "any link to other information" that they "would be interested to check" as a negative aspect. The contradictory responses here have the same logical explanation than before: they prefer to read and the more direct and quicker information access comes from the texts in their opinion. Nevertheless, the texts of the *e-radio* experiment were seen as too simple and "basic" for the type of demand they have.
>
> In that sense, the justification to still prefer the reading is based in the complexity of the written message and the preciseness of the information given. Thus, although the "text was very basic", the respondents assessed positively the "more specific" messages, the easier-less distracting flow, and the broadcasting of "exact information" that they "wanted to hear".

4.2.2 Data analysis to test the H2

The second hypothesis of this study stated the following: *the audience will embrace positively the textual information output and, hence, their opinions will reinforce the e-radio project*. This formulation expected that the respondents would value the *e-radio* experience with more positive than negative feedbacks after the experiment.

In order to produce results that could strengthen or weaken that expectation, the questionnaire included four questions specifically designed for that purpose. Those inquiries, questions #16, #17, #18, and #19, asked the subjects to give advice about the advantages and disadvantages of the news radio broadcasting and the news texting reporting. They were all formulated under this model: "*If you had to give advice to another future participant of the experiment, explain shortly a maximum of three positive reasons / disadvantages for this person to pick the audio information output /choosing the audio information output*". A second goal behind these questions was to

further integrate the most positive concepts from both outputs into the improved version of the *e-radio*. These four questions were analyzed together because they were looking for similar ideas. In fact, many of the subjects declared in the sessions that these questions were redundant in the sense that the positive things of one output were at the same time the negative things of the other and vice versa. However, the redundancy was desired in order to look for repetitions and get as many specific and honest feedbacks as possible in a common general afterthought.

These goals linked back with the theoretical section "the channel of action", where it was explained how McLuhan discussed the connections between the human communicative habits and the media and technologies employed for that purpose. The differences between the *e-radio* and radio broadcastings included in the prototype were ideal to compare how the audience dealt with the same message in content but spread in two media or "channels". Especially, to inquire which "effects", "sense[s] or facult[ies]" could be "extended" (McLuhan 1964, 45), since the findings of the results related by the respondents could help to "behold, use or perceive any extension" of them "in technological form" in a necessary way "to embrace" the *e-radio* project (McLuhan 1964, 46). Thus, the theory of the medium as the message was relevant to analyze the conclusions. The aim was to understand the motivations and user preferences behind the opinions about both channels of action in order to improve the *e-radio* later.

The coding technique applied to the data generated here seven main preliminary themes. The first topic suggested by the answers was the *differences of time to achieve the right information* between radio and *e-radio*, where the former was usually seen as more direct and faster than the latter. The second topic was the *comfort to get news information items*. At this point, the respondents valued the radio positively because it did not need special attention to follow the speech, but at the same time appreciated the easiness of the *e-radio* to navigate through the information items back and forth. The third topic of discussion agreed by the audience was the advantage of the *e-radio* to overcome *language level difficulties* thanks to the clarity of a speech without noise, accents or limited duration. The fourth topic produced by the coding showed a negative aspect of the prototype regarding a *lack of human interaction* that made the message for some respondents more boring and bland. The fifth topic highlighted by the audience was about the amount of *more detailed information that can be gained* using text messages compared with the fugacity of the radio audios. Actually, the *fugacity of the*

radio messages was seen as an indirect positive aspect of the *e-radio* that became the sixth main topic of discussion. Finally, the seventh topic that was pointed out by the respondents was the *coherence between audio and text running simultaneously*, that was generally seen as annoying for a right understanding of the stories.

Hereby, in relation to the H2, questions #16, #17, #18, and #19 obtained interesting feedbacks regarding to the strengths and weaknesses of the *e-radio* prototype and the radio broadcastings. These feedbacks that could test the formulation were put into a narrative line through the following report of the coding:

> First of all, the subjects identified the time factor as crucial to get the right information. Generally, the audio was seen as a quicker and "faster" output of information broadcasting, "more direct" sometimes and with a "more stressing" delivery of items. In that sense, they agreed on the "more time consuming" procedure of the texts to "process the information". The conclusion here is that the radio was faster giving information and the reading activity takes more time in order to decode the information and to select the relevant facts. However, it is a "clearer", "more objective", "digestive" way of understanding "the body of the news" and getting "the topic". To read the *e-radio* needed longer processing time than to listen to the radio, but it was valued positively to do so, less "overwhelming" and "rewarding".
>
> In that sense, the subjects explained a preference not only based in a richer, deeper and more complete understanding of the news stories, but also in the comfort given by the output to get well-informed in the most relaxing and less stressing possible way. Here again, the distractions were associated with the fact of both outputs running simultaneously –"it might be confusing to be reading while listening to something different"–. According to the respondents, ideas such as "without effort", "relaxing way to be informed" or "less work", are desirable for the *e-radio* project. It looks like they wanted to get the more information with the easier level of concentration during the experiment. At the same time, it was much appreciated that the texts were giving the option to go back and form to consult the information items in order to "get all the details" and "do not miss anything" because "you will see the information written and be sure of what is being told". Thus, they felt like they could choose "how much information" they wanted "to extract" under their "own dictation" and that is also explained in terms of the desired comfort. The *e-radio* should be definitely specific and complete, but also easy to follow under the perspective of comfort.
>
> Then, the subjects agreed on the language level skills to determine the preference to one output or another. A stronger advantage of the *e-radio* over the radio was the easier comprehension of the total speech, eliminating noise problems such as "the speaker's accent", "English ability" or "pronunciation". In their opinion, "it is easier to read a foreign language than listen to it and understanding it". Since their goal was to understand as much as possible with the minimum effort, looks like an extremely good feedback of the *e-radio* is the universality of the

written speech to connect with all kinds of readers for a better comprehension of the news stories, no matter their language.

On the contrary, a big disadvantage that the *e-radio* should try to fight is the less human interaction spread with the written word – that it is much appreciated by the respondents. Hence, they declared that a god thing of the audios was "the voice", the "real" connection "through verbal messages" and "accents" that were found "quite interesting". In their opinion, the "tone" comes with "impressions from the person hosting the [radio] program" that are missed when reading. That makes the written speech "less personal" and eventually "boring" for some of them. This handicap could make the news feed sometimes not as "richer" and "complete" as the audio in that sense.

Finally, the fugacity of the message appeared as a theme of importance for the subjects as well. Their main concern here was to "manage to understand" the whole news reporting. In that sense, according to what was explained before, they liked the possibilities of "re-read the text" and disliked not to be able to "rewind the audio". It looks like the subjects preferred to have the chance to "read the information twice" and case of misunderstanding something "in a first lecture". Consequently, the *e-radio* should be as fast and immediate as the radio, but giving the chance to the subjects to go back and forth in the whole texts of reporting.

The coherence theme was mentioned by several of the respondents, but they all meant the different speeds of buffering between both outputs when running simultaneously during the exposures. Though, those impressions are not relevant for the conclusions that the experiment was aiming to achieve.

Hence: *the experiment strengthened the expectation formulated in the H2*. The findings of the quantitative analysis through the answers to these questions showed relevant conclusions that tested positively the formulation. The respondents gave more positive than negative feedbacks to the *e-radio* than to the radio after their experience in the news reception phase. These results hereby legitimated the acceptance of the *e-radio* project in a selected audience that could be the main target of the App in the future.

In conclusion, the *e-radio* prototype tested during the experiment sessions have been welcomed with positive expectation and interested by a specific audience of qualified users. The theories employed and the questionnaire design enriched the scientific process, and the experience of the respondents was positive enough. Thus, I believe now that the *e-radio* concept can become a real product that broadcasts radio using the written word. The experiment has shown that the idea of a printed radio, after some re-designs and improvements of the prototype can become a successful product.

5. CONCLUSIONS AND DISCUSSION

This master thesis paper has tried to find relevant opinions, understandings and feedbacks from a highly specialized audience about a news gadget called *e-radio* that tries to imitate Twitter technology to spread information. In this chapter, a summary of the final conclusions is firstly presented. After that, a later discussion about the learning experience and the future implications involving the product are briefly discussed to help to contextualize and close the relevance of this study.

5.1 Summary of conclusions

The previous chapter presented and explained a data that helped "to produce findings in support of the hypotheses" (Yin 2011, 101) or not, because "the study's findings should demonstrate whether and how the empirical results supported or challenged the theory", and, "if supported, the investigators then need to show how the theoretical advances can pertain (generalize) to situations other than those examined as part of the original study" (Yin 2011, 101). At the same time, the two research questions of the study were replied through several reports that explained and described the conclusions enlightened by the experiment sessions. These conclusions are now summarized below:

1. *The participants prepared themselves for the experiment to get as much information as possible. They explained in their answers that the goal was to apprehend all the details and achieve a better understanding of the news stories. In that sense, the audio was always identified as the main news thread and the e-radio as a complement that helped to contextualize and clarify the message.*

2. *The participants differed in the type of device employed to follow the news or to log in social networks, but almost all of them declared that they are not Twitter users at all. Nevertheless, they manifested a preference for reading news stories rather than to listen to them on the radio. In general, they said that they had a higher reading habit, particularly on the Internet, which is encouraging for the project.*

3. *The participants find it more interesting and comfortable to read about a topic. They all agree that the e-radio is a less personal way of getting information since the human verbal interaction is lost. But at the same time, they value highly positively to be able to select those parts of the written speech that interest them the most. Also, they would prefer to have extra time to go back and forth in the reading. In their opinion, this flexibility makes the experience more rewarding and comfortable because they can get for sure all the details, with less stress and avoiding noise problems or language difficulties*

4. *The e-radio has to be re-designed in terms of comfort: the speed of the text buffering has to be adjusted, and the messages have to be always available for the users if case they want to re-read some parts.*

5. *The e-radio highlights the quicker flow of information that is detailed and it structures better the message of the news body. The subjects liked to use it complementary to understand better what was going on without stressing with the high velocity of the audios. Their preference is to get the more information with the minimum effort.*

5.2 Learning experience

To sum up, this last section of the chapter discusses briefly the learning process developed and achieved during the experiment sessions of this research. In that sense, Robert Yin explains that "there is one other writing activity that parallels the data collection (and other) processes in a research study" and it "involves keeping a personal journal or diary, capturing your own feelings and reflections on your own research work" because "any journal or diary would naturally be a good source of information for this aspect of the final reporting" (Yin 2011, 175).

According to him, "the entries in such a journal do not need to be lengthy or even complete sentences" because "in qualitative research, such a journal can play more than a private role", helping for example to avoid "unwanted biases" or helping to "surface your own methodological or personal tendencies over time" which "may lead to useful thoughts about how to approach your later analysis" (Yin 2011, 175). That private role of the journal sessions was exactly the followed approach in this small

audience research experiment. The purpose of those notes was basically to help to conduct the sessions, to anticipate doubts of the subjects regarding not so clear questions and, in addition, to become faster and more efficient dealing with the tiny problems that were appearing.

Regarding the theoretical implications, the learning process has shown the relevance of the theories considered for this research. Firstly, the experiment sessions helped to confirm the theoretical expectations in terms of speech of the message and channel of the action. McLuhan thoughts were proved by the opinions of the respondents based on their experience, and so the *e-radio* was seen as a rather cold medium with more interactivity, and more rewarding for following the news stories than the radio broadcastings. Secondly, the framing theory showed its importance for this research when the respondents explained the factors of the news stories that they found more remarkable. Their explanations about what was interesting and more complete to understand the information were successfully contextualized in terms of frames or salience aspects of the information items. Thirdly, it was confirmed the metaphorical conception of the news items described by Lippmann to illustrate how the public opinion work. And finally, the uses and gratifications experimental tradition helped to carry out the experiment sessions with a correct and valid design that worked without problems all the time.

Concerning the methodical implications, there are two aspects of revision. Firstly, regarding the sessions as such, all the subjects completely understood what they had to do in the news reception phase and major problems simply did not come up. In addition, to ensure the correct comprehension of the experiment, the question #12 asked to *define in a few words what you have understood about the information given in the news reception phase of the experiment*. In this inquiry, all the respondents gave answers that proved efficient that they had paid attention to both exposures during the news reception phase and, consequently, that they had understood the ongoing process.

Secondly, the questionnaire also included tools of revision to ensure the validity of the research. During the sessions, only a few questions or parts of the questions presented minor difficulties to be understood in the first reading. Particularly, the option d) in question #3 carried the most frequent setbacks. Other insignificant doubts came up too, but they were so irrelevant that did not interfere in the general thoughtful of the

experiment sessions. For instance, some people asked what to answer exactly in questions #7 and #8 if they did not have a tablet.

Finally, a last section called "experiment participation feedback" was included at the end of the questionnaire to guarantee that the experience of the subjects had been done correctly. This section C of the questionnaire contained six questions with liker-scale pre-selected answers that went from "I strongly agree" to "I strongly disagree". These questions were about the different instructions and phases of the experimental participation. In the answers, almost all the subjects marked the options "I strongly agree" or "I agree", and the lowest ranked option was "I neither agree or disagree" in just a few concrete occasions.

5.3 Final discussion and relevance

This small audience research experiment has contributed to set up the beginning for a new conceptual product in the media market. The so-called *e-radio* can be seen now as a new type of radio broadcasting that spreads information only using texts. This idea is defined in this paper as "printed radio", and it has been theoretically justified in terms of the immediacy gained by similar online services nowadays such as Twitter. The answers given and the findings of the *e-radio* experiment showed that there was a preference in the audience to follow text messages as a quicker and more direct way to better understand the news stories. No one of the respondents made a skeptical comment suggesting that such a text messaging service could never be as fast, immediate, and complete as the radio broadcastings.

Hence, a printed radio service is a relevant field of study that aims to develop global textual services that can help users worldwide in many different areas: news feeding, customer services in companies, classroom debating through live chats, etc. There are as many possibilities as ideas the developers can have. The immediacy of the written word has come to us thanks to Twitter, and some specialized subjects have given here relevant impressions and feedbacks that should encourage continuing working in that direction with the *e-radio* project.

In that sense, the starting point should be Twitter nature again. Christoph Neuberger, Hanna Jo von Hofe, and Christian Nuernbergk say that Twitter "does not

primarily function as a social network for establishing or maintaining contacts, but instead as a network of disseminating information and breaking news" (Weller et al. 2014, 345). According to Alfred Hermida, "concurrently, Twitter serves as a channel for the distribution of material from journalists and the mainstream media" so "exchanges around news events circulate as reports, rumors, and speculation are shared on the network and are challenged, contradicted, or corroborated". This type of networks "facilitates the instant, online dissemination and reception of short fragments of information from sources outside the formal structures of journalism, creating social awareness streams that provide a constantly updated, live representation of the experiences, interests, and opinions of users" (Weller et al. 2014, 360-61).

This explained service is also called "microblogging" and "Twitter is the most widely known microblogging platform" because, as Hennig-Thurau, Wiertz and Feldhaus pointed in 2012, it "has become synonymous with the concept" (Patriarche et. al 2014, 197). Thus, the *e-radio* should be a natural evolution of "microblogging". That is defined as "a form of blogging (Herwig et al. 2009)" where information items "are published in reverse chronology with the latest news first", and published with a body "limited to 140 characters (like a text message)" which "enables rapid sharing of information and at the same time stimulate creative ways of circumventing this limitation". Also, "the shortness of the tweets makes them relevant as a status-update service and usable for mobile usage" to the point that according to Lockergnome (2010) "Twitter is the evolution of mobile messaging" (Patriarche et al. 2014, 197).

Now it is time for the *e-radio* project to continue in this line of research and offer improvements and new concepts that can create not only news journalistic gadgets but also bring in other bright ideas in the field of microblogging and technology. The eventual purpose is to help human communication and find out what users prefer. This little experiment has tried to contribute to this goal inspired by Twitter and its functioning. The feelings after submitting this work are clear and exciting: maybe one day we will be able to broadcast printed radio.

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9. APPENDICES

Questionnaire transcript of responses:

A. Personal considerations:

1. What is your gender?

S1 → b) Female
S2 → b) Female
S3 → b) Female
S4 → b) Female
S5 → a) Male
S6 → a) Male
S7 → b) Female
S8 → b) Female
S9 → a) Male
S10 → a) Male
S11 → a) Male
S12 → a) Male
S13 → b) Female
S14 → a) Male
S15 → a) Male

TOTAL → 8 Males (a) / 7 Females (b)

2. What is your current Degree of studies?

S1 → a) Bachelor student
S2 → b) Master student
S3 → b) Master student
S4 → a) Bachelor student
S5 → b) Master student
S6 → b) Master student
S7 → b) Master student
S8 → b) Master student
S9 → b) Master student
S10 → b) Master student
S11 → b) Master student
S12 → a) Bachelor student
S13 → b) Master student

S14 → b) Master student
S15 → a) Bachelor student

TOTAL → 4 Bachelor students / 11 Master students / 0 PhD students

3. Which traditional media do you use to follow the news? (Please, specify how often in those you check)

S1 → Newspapers: 4 / Radio Bulletins: 4 / TV News: 2 / None: 4 / No News: 2

S2 → Newspapers: 4 / Radio Bulletins: 4 / TV News: 4 / None: 2 / No News: 2

S3 → Newspapers: 3 / Radio Bulletins: 2 / TV News: 4 / None: 2 / No News: 4

S4 → Newspapers: 4 / Radio Bulletins: 2 / TV News: 4 / None: 3 / No News: 5

S5 → Newspapers: 5 / Radio Bulletins: 4 / TV News: 2 / None: 2 / No News: 5

S6 → Newspapers: 2 / Radio Bulletins: 4 / TV News: 4 / None: 5 / No News: 5

S7 → Newspapers: 5 / Radio Bulletins: 5 / TV News: 5 / None: 4 / No News: 2

S8 → Newspapers: 1 / Radio Bulletins: 2 / TV News: 3 / None: 5 / No News: 5

S9 → Newspapers: 1 / Radio Bulletins: 1 / TV News: 2 / None: 4 / No News: 4

S10 → Newspapers: 5 / Radio Bulletins: 5 / TV News: 4 / None: 2 / No News: 2

S11 → Newspapers: 5 / Radio Bulletins: 1 / TV News: 2 / None: 5 / No News: 5

S12 → Newspapers: 4 / Radio Bulletins: 4 / TV News: 4 / None: 2 / No News: 5

S13 → Newspapers: 5 / Radio Bulletins: 5 / TV News: 4 / None: 4 / No News: 3

S14 → Newspapers: 5 / Radio Bulletins: 4 / TV News: 5 / None: 2 / No News: 2

S15 → Newspapers: 5 / Radio Bulletins: 5 / TV News: 3 / None: 1 / No News: 5

LEGEND: 1) Every day 2) Several times a week 3) Once a week 4) Occasionally 5) Never

4. Which online media do you use to follow the news? (Please, specify how often in those you check)

S1 → News Webs: 1 / Audio Webs: 4 / TV News Webs: 4 / None: 5 / No News: 4

S2 → News Webs: 2 / Audio Webs: 4 / TV News Webs: 4 / None: 2 / No News: 2

S3 → News Webs: 1 / Audio Webs: 4 / TV News Webs: 4 / None: 4 / No News: 4

S4 → News Webs: 2 / Audio Webs: 2 / TV News Webs: 4 / None: 3 / No News: 5

S5 → News Webs: 1 / Audio Webs: 5 / TV News Webs: 1 / None: 5 / No News: 5

S6 → News Webs: 1 / Audio Webs: 2 / TV News Webs: 4 / None: 5 / No News: 5

S7 → News Webs: 2 / Audio Webs: 5 / TV News Webs: 2 / None: 4 / No News: 4

S8 → News Webs: 1 / Audio Webs: 2 / TV News Webs: 3 / None: 5 / No News: 5

S9 → News Webs: 2 / Audio Webs: 2 / TV News Webs: 4 / None: 4 / No News: 4

S10 → News Webs: 1 / Audio Webs: 4 / TV News Webs: 4 / None: 4 / No News: 5

S11 → News Webs: 1 / Audio Webs: 4 / TV News Webs: 2 / None: 5 / No News: 5

S12 → News Webs: 1 / Audio Webs: 4 / TV News Webs: 1 / None: 5 / No News: 5

S13 → News Webs: 4 / Audio Webs: 3 / TV News Webs: 5 / None: 3 / No News: 3

S14 → News Webs: 1 / Audio Webs: 4 / TV News Webs: 4 / None: 5 / No News: 5

S15 → News Webs: 1 / Audio Webs: 4 / TV News Webs: 4 / None: 5 / No News: 5

LEGEND: 1) Every day 2) Several times a week 3) Once a week 4) Occasionally 5) Never

5. Which social networks do you use normally? (Please, specify how often in those you check)

S1 → Facebook: 2 / Twitter: 2 / Instagram: 4 / Others: 2 / None: 5

S2 → Facebook: 1 / Twitter: 5 / Instagram: 2 / Others: 1 / None: 4

S3 → Facebook: 1 / Twitter: 5 / Instagram: 3 / Others: 5 / None: 4

S4 → Facebook: 2 / Twitter: 5 / Instagram: 5 / Others: 1 / None: 5

S5 → Facebook: 1 / Twitter: 5 / Instagram: 5 / Others: 2 / None: 5

S6 → Facebook: 1 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 5

S7 → Facebook: 1 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 1

S8 → Facebook: 2 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 5

S9 → Facebook: 2 / Twitter: 5 / Instagram: 5 / Others: 4 / None: 4

S10 → Facebook: 2 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 4

S11 → Facebook: 1 / Twitter: 4 / Instagram: 2 / Others: 3 / None: 5

S12 → Facebook: 2 / Twitter: 5 / Instagram: 5 / Others: 2 / None: 4

S13 → Facebook: 1 / Twitter: 5 / Instagram: 5 / Others: 1 / None: 5

S14 → Facebook: 1 / Twitter: 1 / Instagram: 1 / Others: 1 / None: 5

S15 → Facebook: 1 / Twitter: 5 / Instagram: 5 / Others: 4 / None: 4

LEGEND: 1) Every day 2) Several times a week 3) Once a week 4) Occasionally 5) Never

6. Do you use the social networks to specifically follow the news? (Please, specify how often in those you check)

S1 → Facebook: 5 / Twitter: 4 / Instagram: 5 / Others: 4 / None: 5

S2 → Facebook: 4 / Twitter: 5 / Instagram: 5 / Others: 1 / None: 4

S3 → Facebook: 2 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 4

S4 → Facebook: 4 / Twitter: 5 / Instagram: 5 / Others: 4 / None: 5

S5 → Facebook: 5 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 1

S6 → Facebook: 1 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 5

S7 → Facebook: 2 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 1

S8 → Facebook: 2 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 5

S9 → Facebook: 4 / Twitter: 5 / Instagram: 5 / Others: 4 / None: 4

S10 → Facebook: 4 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 2

S11 → Facebook: 2 / Twitter: 4 / Instagram: 5 / Others: 5 / None: 4

S12 → Facebook: 5 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 1

S13 → Facebook: 5 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 1

S14 → Facebook: 2 / Twitter: 1 / Instagram: 4 / Others: 5 / None: 5

S15 → Facebook: 2 / Twitter: 5 / Instagram: 5 / Others: 5 / None: 5

LEGEND: 1) Every day 2) Several times a week 3) Once a week 4) Occasionally 5) Never

7. Which device do you prefer to use when you want to check the news online? (Please rank the following in order of desirable to you, from 1 = first option, to 3 = last option)

S1 → Smartphone – Laptop – Tablet
S2 → Smartphone – Laptop – Tablet
S3 → Smartphone – Laptop – Tablet
S4 → Smartphone – Laptop – Tablet
S5 → Smartphone – Laptop – Tablet
S6 → Smartphone – Laptop – Tablet
S7 → Laptop – Smartphone – Tablet
S8 → Laptop – Smartphone – Tablet
S9 → Laptop – Smartphone – Tablet
S10 → Laptop – Smartphone – Tablet
S11 → Smartphone – Tablet – Laptop
S12 → Laptop – Smartphone – Tablet
S13 → Laptop – Smartphone – Tablet
S14 → Smartphone – Tablet – Laptop
S15 → Laptop – Tablet – Smartphone

8. Which device do you prefer to use when you log in social networks? (Please rank the following in order of desirable to you, from 1 = first option, to 3 = last option)

S1 → Smartphone – Laptop – Tablet
S2 → Smartphone – Laptop – Tablet
S3 → Laptop – Smartphone – Tablet
S4 → Smartphone – Tablet – Laptop
S5 → Laptop – Smartphone – Tablet
S6 → Smartphone – Laptop – Tablet

S7 → Laptop – Smartphone – Tablet
S8 → Laptop – Smartphone – Tablet
S9 → Smartphone – Laptop – Tablet
S10 → Laptop – Smartphone – Tablet
S11 → Smartphone – Tablet – Laptop
S12 → Laptop – Smartphone – Tablet
S13 → Smartphone – Laptop – Tablet
S14 → Smartphone – Laptop – Tablet
S15 → Laptop – Tablet – Smartphone

9. If you were very interested in a particular news story, what would you choose to do between these two options? (Please, explain shortly why)

a) I would prefer to read about it: I would go online and/or grab one or more newspapers and start reading all the articles related to the topic:

S1 → **Because** "I barely listen to the radio at all; if anything I just listen to music programs. I actually find kind of annoying listening to news on the radio."

S2 → **Because** "I am used to be reading the news because it is less stressful and you can come back to what you´ve read easier."

S4 → **Because "**if I am interested in some news I find information quickly online and it is easier."

S5 → **Because** "then I have the opportunity to read it several times and to skip to the parts that I find interesting. For me I want to find the interesting news as quick as possible. The radio doesn´t quite make it. Life is hectic and I don`t go around with a radio (except my phone). I think I get more information by reading than solely listening."

S6 → **Because** "It provides a deeper knowledge of the topic thanks to the comparison of the articles that were written by different newspapers."

S7 → **Because** "I am used to read newspapers. I am more concentrated if I read. I do not pay attention to the radio because I can do other things while I am listening to one program."

S8 → **Because** "when I read I understand better."

S9 → **Because** "I can go in deep and be sure what they are telling to me."

S10 → **Because** "when I read something it is easier for me to extract the main points using not only the transmitted information (the text or the voices). I can pay attention to the headlines and also the images (if they exist) and it is easier to find related information using the links that online newspapers provide. In my

opinion it is easier and richer read online newspapers than listening online radio. I can also read it at my own pace."

S11 → **Because** "it is faster, and I feel more in control of wat information I obtain. And I can read as fast as I want to, and have more control with which parts of the story I want to know more about."

S12 → **Because** "I rarely tune In to radio stations, let alone follow the news on the radio. However, it is much easier and faster to look up a particular news item online."

S13 → **Because** "I can take my time to read it and understand better what the news are about. Sometimes radio goes too fast and I can lose some important information."

S14 → **Because** "Quicker information reception to the brain and also because I can dictate the speed of the reading material, which is not possible with audio."

S15 → **Because** "I like to know all the details of the news."

b) I would prefer to listen to it: I would switch on the radio and/or go to online radio services to hear all about the topic:

S3 → **Because** "I understand more easily what I hear than what I read, and so I remember it more easily. Also, I like listening because it is relaxing."

10. Have you ever watched the news on TV or on the Internet and become distracted by upcoming headlines running in the lower part of the screen? (Please describe shortly why)

a) Yes, that always happens to me and I tend to focus on the reading forgetting about the main news thread:

S8 → **Because** "I use to read, so I think that I am accustomed to do it…"

S9 → **Because** "it is something new which appears in the conversation with any words between the person and the media."

S14 → **Because** "The news in the lower part of the screen is a more dynamic view and gives more information per second as compared to the anchor or the news audio stream."

b) Sometimes I pay more attention to those headlines, but in general I keep on following the main news thread:

S1 → **Because** "sometimes I find that info more interesting and like it keeps you up-to-date easily."

S2 → **Because** "it depends on the news which are running as a headline, if they are very serious, I will f course pay more attention to them comparing to what is being told."

S3 → **Because** "I do not find them distracting. I think it is good that I can choose to focus on the headlines if the news on screen get boring."

S4 → **Because** "the other news might be something I have been reading about earlier, or seem more important at the moment."

S5 → **Because** "the moment I start reading my mind has trouble following the audio message. So I either try to read it quick or ignore it a bit. I think I get more information if I close my eyes in those cases. It is difficult to get information from several channels."

S6 → **Because:** "These upcoming headlines often describe the news with a few words and it helps not to be totally distracted of the main news thread."

S10 → **Because** "If those texts are subtitles I cannot explain why but I tend to read them even though I understand what they are speaking, but when the texts are commercials or other stuff I am not interested in I tend to not pay any attention to them."

S12 → **Because** "If the running headlines were about something that interests me, whereas the news item on the screen is not particularly interesting to me, then I´d rather read about the item that interests me than ´wasting´my attention on something that I find somewhat irrelevant."

S13 → **Because** sometimes I try to focus on both news to get more information about what is going on In the world but then I realized I can get distracted and try to focus just on one of the things."

S15 → **Because** "I can pay attention to both, and still be aware of the incoming news that I would like, or not, to follow."

c) <u>No, I never get distracted by them and I totally ignore those messages:</u>

S7→ **Because** "I do not like advertising, it bother me quite a lot."

S11 → **Because** "I don't think I often come across news online that do have these distractions."

11. Have you ever watched a film in a foreign language with subtitles and eventually paid more attention to them than to the movie action? (Please describe shortly why)

a) Yes, it always happens to me during the whole movie:

S14 → **Because** "the subtitles give some context to what the scene is about and actually complete it. Without that, I would easily lose the plot of the movie."

b) Yes, when I watch a film in a foreign language with subtitles I am sometimes basically reading the subtitles and missing action details, but not during the whole film:

S1 → **Because** "sometimes if you are missing details because the characters are using slang or whatever, I prefer to just look at the subtitles and really understand what they are saying."

S2 → **Because** "The subtitles attract more attention to me as a viewer and also they help me to understand the speech better since the film is in a foreign language, often I use subtitles to get better understanding but also since they are always running on the screen I tend to read them even if I understand what the characters are talking about."

S3 → **Because** "this happens, but I have gotten used to it in time. I find it helpful to know exactly what the actors said."

S4 → **Because** "to understand what is going on in the movie I need to know what they are talking about."

S5 → **Because** "I think my attention automatically is drawn to the subtitle. Whenever there is a text it is difficult not to read it. Several times I have watched a movie in English with Norwegian subtitles and ended up turning it off. For me it is easier to follow either text or sound if I know the language."

S6 → **Because:** "It is especially necessary to read the subtitles when there are deep and long dialogues during the film. I normally try to avoid this behavior because there is no need to understand 100% of the screenplay to get the picture of the film."

S7 → **Because** "the most of the movies I like are "deep" in terms of dialogues and meanings, not just in actions."

S8 → **Because** "If I watch a film in a foreign language It is easier to my to read the subtitles, but I try to listen too only because If I want to improve the language."

S9 → **Because** "sometimes is without any willingness. I mean sometimes I don't pay attention what I am doing and later i change to put much more attention to the film and not focusing in the text. It depends on the difficulties that present that film of course in the same way."

S10 → **Because** "my level of attention to the subtitles depends highly on the difficulty I have to understand the language. The more difficult to understand the more I read the texts."

S12 → **Because** "When I have difficulties understanding the language orally but I can better understand the written text, then I automatically shift my attention to the subtitles in order to better understand what is being said and what is going on."

S13 → **Because** "sometimes I feel that If I don't read the subtitles I won't understand the movie. But then I want to see also the action on the movie so I use to mix and try to focus on both thing."

S15 → **Because** "the message present in the subtitles is an important part of the movie, as it helps to understand the plot (hard to do if the language is unknown)."

c) No, I never pay more attention to the subtitles since my priority is to watch the ongoing movie action so I exclusively focus on that:

S11 → **Because** "I mainly watch movies with English language speech, and I understand that without needing to focus on the subtitles. If I want some support in my understanding of the speech I will look at the subtitles for a brief moment, and re-focus on the movie action without ever losing attention."

d) No, I never watch films with subtitles:

None.

B. News reception phase experience:

12. Define in a few words what you have understood about the information given in the news reception phase of the experiment:

Exposure A was about:

S1 → "The weather, I guess in Norway, because it all went too quickly and I really missed out all the details. It was pretty uncomfortable like I was being overwhelmed with info."

S2 → "Weather forecast, showers and thunderstorms."

S3 → "The weather forecast."

S4 → "Weather news."

S5 → "Weather report. Something about a thunderstorm and temperatures."

S6 → "A daily local weather forecast."

S7 → "The weather."

S8 → "I have understood a little… but I have forgotten it…"

S9 → "Almost not much. It was so quickly. It could be some advertisement published in the radio."

S10 → "Weather forecast."

S11 → "Weather report Technical."

S12 → "An interesting weather report – Florida or San Francisco?"

S13 → "The first exposure was giving the week's weather forecast."

S14 → "Weather and the cold wind and the clouds."

S15 → "Weather forecast in a radio show."

Exposure B was about:

S1 → "The divorce rate in Norway, up to 40%, and the Government trying to improve that situation by suggesting date nights, based on a famous American movie."

S2 → "Date nights for Norwegian couples."

S3 → "The health minister (or something) in Norway suggesting that married couples go on date nights, in order to reduce the number of divorces. And something about mooses in the beginning…"

S4 → "Divorce percentage in Norway and how to make it less."

S5 → "Norwegians divorcing rate. It was 40 %. The radio host interviewed a person suggesting that the Norwegians should do more like the Americans and have date nights during the week. I think they also talked about a movie where this was the case, with a happy ending."

S6 → "Percentage of broken Norwegian marriages."

S7 → "Fight high divorce rates in Norway with night dates."

S8 → "The rate of divorce in Norway is the 40 per cent. Someone speaks about the solutions that the government purpose to solve it. They speak about "date nights", an idea based on a film or something…"

S9 → "the percentage of people in Norway that they get divorced and the solutions to tackle that and avoid it."

S10 → "To improve marriage relationships with dates."

S11 → "Date Night to prevent divorces in Norway, suggested by Solveig."

S12 → "Measures to reduce divorce rate in Norway."

S13 → "The possible solutions that one minister of Norway was giving to solve the problem about the 40% of marriages that end up in divorced."

S14 → "Elks in the beginning and then it goes onto date night and the Norwegian Government, Horne."

S15 → "Norwegian divorce rates presented in the radio, and the comments explaining that to the audience."

13. How was your experience during the news reception phase in the Exposure A? (Please, explain your answer)

a) I was able to follow both the audio and the textual outputs simultaneously during the whole time. I am multi-tasked!

b) I only listened to the audio and ignored completely the texts. And I managed

c) I only read the texts and totally ignored the audio. And I could concentrate.

d) I tried to focus in the audio output, but many times got distracted by the texts. Overall, I still listened more than I really read:

S4 → **Because** "it was going so fast and the text and audio wasn't matching all the time."

S11 → **Because** "It felt like the text was lagging behind the audio and gave me less information. Therefore I gradually ignored the text, but because there were a lot of numbers and technical expressions, it was an ok support to have sometimes."

S12 → **Because** "I realized that there were more details in the audio than in the written text and I wanted to absorb as much information as possible (maybe because I found this weather report very interesting to listen to too)."

S13 → **Because** "it was going very fast and I tried to focus on the audio but sometimes I was also reading the text In case I could get more information."

e) I attempted to focus on the textual output, but many time got distracted by the audio. Yet, I was rather reading than actively listening:

S6 → **Because:** "The speed of the text required to focus on reading than listening. The audio was considered as an extra help to try to understand the content."

S14 → **Because** "the audio seemed to be distracting. I wasn´t so happy with the accent of the speaker and of course the speed at which they spoke wasn´t at my level."

f) I was paying attention sometimes to one output and sometimes to the other. Doing so, it was alright to understand what was going on:

S2 → **Because** "Since I started hearing the audio I automatically started listening to it but then I also wanted to read the running line and tried to combine both to get better understanding of the information given."

S15 → **Because** "the text was a complement for the audio message."

g) I was paying attention sometimes to one output and sometimes to the other. However, I did not understand correctly what was going on:

S1 → **Because** "I was shifting my attention from one output to the other, but not really grasping any detail, just getting a general idea about the topic."

S5 → **Because** "I didn`t have a clear strategy when I started. I just wanted to see if I could manage both audio and text, but I had some troubles handling it both. At a moment I tried to only read the text, but it was not possible for me to not be distracted by the audio message. That is why I changed my strategy for the next part."

S10 → **Because** "at first I had to make sure the general idea were the same at the audio and at the text, but I am not sure whether the information was the same in both, I could just get they were talking about the same topic, not check the information on it."

h) I wanted to listen to the audio output and prepared myself for that, but eventually changed my mind to read the texts:

S7 → **Because** "I felt more comfortable in this way and the topic was so boring."

i) I wanted to read the textual output and I was ready to do it, but eventually changed my mind and listened to the audio:

S3 → **Because** "when the news anchor was talking, it was more coherent and logical to follow, and thus easier to understand than the resumes that are written. The written text is not natural speech."

S8 → **Because** "I have decided to read the text before, but When I have listened and have read a word at the same time, I have needed two or three seconds to retake the text."

j) I could not really focus on anything during the whole time. It was too difficult and confusing to follow any output:

S9 → **Because** "maybe it was my fault. So late when i tried to focus in both and finally didn't understand the general meaning. Just picking some words that revealed where was the media but not so many things in deep."

14. How was your experience during the news reception phase in the Exposure B? (Please, explain your answer)

a) I was able to follow both the audio and the textual outputs simultaneously during the whole time. I am multi-tasked!

S2 → **Because** "the exposure was going slower so it gave me time to first listen and then to read. The information written was the same as spoken but in different order it helped to enhance the understanding in case I could forget something."

S7 → **Because** "the text came later, then I could listen before and read after."

b) I only listened to the audio and ignored completely the texts. And I managed:

S3 → **Because** "I had figured out that I should just listen to the audio now."

S5 → **Because** "I felt I couldn`t focus in the first task. I have done this strategy before, in class for instance. Sometimes I like to close my eyes in class to just listen to the professor (although I have been accused for sleeping) instead of watching his presentation. In this task I could not take away the audio so easily. It was much easier to just close my eyes. In addition, the text was changing so I had no opportunity to read through it carefully and make sure I got it right. In this scenario I believe I remember more information from just listening. Otherwise, I prefer text."

S11 → **Because** "the audio felt more personal, and I felt a stronger connection to the story by listening. I also quickly understood that the audio would give me a more complete understanding of the story."

c) I only read the texts and totally ignored the audio. And I could concentrate:

S8 → **Because** "It was easier. In A I lost the concentration, that's why in B I didn't pay attention to the audio… I have made a bigger effort than in A."

S13 → **Because** "the text was appearing slowly so I thought it was better to read the text in order to understand the news."

d) I tried to focus in the audio output, but many times got distracted by the texts. Overall, I still listened more than I really read:

S9 → **Because** "sometimes the text appeared late so when i didn't understand something I tried to read it but it wasn't in the same time. To be understandable I need both at the same time."

S12 → **Because** "I realized that there were more details in the audio than in the written text and I wanted to absorb as much information as possible (even though I did not find the theme particularly interesting)."

e) I attempted to focus on the textual output, but many time got distracted by the audio. Yet, I was rather reading than actively listening

f) <u>I was paying attention sometimes to one output and sometimes to the other. Doing so, it was alright to understand what was going on</u>:

S1 → **Because** "I found it easier to read when I missed the details, but preferred to return to audio whenever I could because it was live and more complete."

S4 → **Because** "it wasn't that fast and it was easier to get the info by listening then reading."

S10 → **Because** "I had time enough to check the correspondence in the topics and check the correspondence between the text and the audio."

S14 → **Because** "I wanted to read the text, but because it was buffering at the speed of a tortoise, I had to keep switching back and forth. I was forced to g back to the audio because of the extremely slow text speed."

S15 → **Because** "the text was a complement to the audio, however it was easier to follow as it reinforced the message being transmitted (without the weird twitter text)."

g) I was paying attention sometimes to one output and sometimes to the other. However, I did not understand correctly what was going on:

h) <u>I wanted to listen to the audio output and prepared myself for that, but eventually changed my mind to read the texts</u>:

S6 → **Because:** "The texts were only useful to get some information that I didn't get from the audio. The slow running of them is the reason not to focus on them and follow the audio."

i) I wanted to read the textual output and I was ready to do it, but eventually changed my mind and listened to the audio

j) I could not really focus on anything during the whole time. It was too difficult and confusing to follow any output

15. If you could repeat the experiment, to which output would you like to focus your attention next time? (Please, explain your answer)

a) To the audio:

S1 → **Because** "English is not my mother tongue, so whenever I got the opportunity to practice it, I just go with the listening part because it is more challenging for me."

S3 → **Because** "It is more interesting to hear how the news anchors are saying it, than just receiving the information in black and white."

S4 → **Because** "Then I will not get distracted with the extra text coming up, and I will keep my focus on the info and not the reading."

S5 → **Because** "I believe it takes my mind shorter time to process the information if it comes from an audio message. If I read it I first have to read it, understand it and process it to information. In scenarios where you have no time to repeat the information, I prefer audio. In cases where I have as much time as I want I prefer text. The worst combination for me is both at the same time."

S6 → **Because:** "When you follow the texts, you have to adjust yourself to their running speed. On the other hand, you can follow easier the news when you are listening (if your language level is enough to comprehend)."

S9 → **Because** "I could manage understand much more hearing that reading. That's my opinion without tasting it."

S10 → **Because** "In this cases the audio would be easier in my opinion. The text is very basic and won´t provide any link to other information I would be interested to check."

S11 → **Because** "It would be almost impossible for me to ignore the audio completely. And knowing that audio would give me more info I would prefer to ignore the text. I feel like text distracted me on the first turn."

S12 → **Because** "There was far more information in the audio than in the text."

S15 → **Because** "the message was more complex and rich in audio form, than in text (which was more abbreviated). So if I want to fully understand the message I would prefer the more complete one."

b) To the texts:

S2 → **Because** "In the Exposure A it was harder to read all the text while listening, so it could be nice to read it again."

S8 → **Because** "It's easier, less information, more specific."

S13 → **Because** "I think I could understand the news better reading them than listening to them."

S14 → **Because** "I wasn´t so keen on the audio, text was giving me the exact information I wanted to hear in a short format, rather than listening to the whole story."

c) Try to withhold both of them:

S7 → **Because** "it is difficlt to pay attention to both of them at the same time."

16. If you had to give advice to another future participant of the experiment, explain shortly positive reasons (maximum three) for this person to pick the audio information output:

S1 → **1)** "You get the whole info." / **2)** "It is live and more rewarding." / **3)** "You can get more details from the speed or tone of the program host."

S2 → **1)** "The information comes to you without effort." / **2)** The voice of the speaker is nice / **3)** "It is typical way to receive information as on TV and radio it goes through audio."

S3 → **1)** "Direct." / **2)** "Relaxing." / **3)** "Real."

S4 → **1)** "You will be more focused and get more out of listening to the audio."

S5 → **1)** "As stated before. If you choose the audio, the information is ready to be processed by your mind. The text requires more work in my opinion. We as human beings have communicated much longer through verbal messages than written messages. I believe most humans find it easier to understand a verbal message quicker than a written. Then again, this applies when the information is given quickly." / **2)** You will not get confused if you focus on one channel at least ."

S6 → **1)** "You can get the picture of the news even though you miss a part of it." / **2)** "More relaxed way to be informed."

S7 → **1)** "It is more active." / **2)** "It is faster." / **3)** "It is closer, sometimes letters are colder than voice."

S8 → **1)** "The information is more direct."/ **2)** "If you understand English well, you don't have to make a big effort."

S9 → **1)** "Focus in the audio." / **2)** "If you don't understand after a few seconds, try to read. Just read. Sure you gonna take the words."

S10 → **1)** "It is easier to follow the audio than the text, since the audio is more fluent and easy to understand than the text, probably because of the animations, that does not let me to read it according to the speed I wanted."

S11 → **1)** "More personal." / **2)** "More information." / **3)** "Text was lagging behind audio slightly, and that was a bit frustrating."

S12 → **1)** "There´s more information in the audio than in the text." / **2)** "I found listening to the US accent (1st recording), and the kiwi and probably British accents in the second recording quite interesting." / **3)** "I found the delivery of information through the text as somewhat slow."

S13 → **1)** "it gives more information."

S14 → **1)** "If you are doing something that requires your attention, the audio will give you the information without you having to look at the screen."

S15 → **1)** "Richer (complete)." / **2)** "The 'human' interaction." / **3)** "I can concentrate in physical chores while listening it."

17. **If you had to give advice to another future participant of the experiment, explain shortly disadvantages of choosing the audio information output (maximum three):**

S1 → **1)** "You may lose details." / **2)** "It is more stressful." / **3)** "You may get distracted by your own thoughts."

S2 → **1)** "The speech goes very fast." / **2)** "If you don´t understand the speaker´s accent, you won´t understand the meaning of the information." / **3)** "There is a lot of information told, so it can be hard to get all the details."

S3 → **1)** "Overwhelming." / **2)** "It can be distracting (the way they talk)." / **3)** "You can start reading something and get distracted."

S4 → **1)** "The audio may be a bit fast."

S5 → **1)** "If you miss a sentence or do not understand the pronunciation you are doomed if you only focus on the audio. With the text it is easier to know exactly what the person is trying to tell you. But it may take more time to process the information."

S6 → **1)** "It is necessary a good level of the language not to get lost of the topic and miss important details."

S7 → **1)** "It is faster and you cannot get the topic." / **2)** "You can do more things while you are listening, then you can forget you are listening and audio."

S8 → **1)** "It goes so quickly." / **2)** "It is easier to forget if you only listen."

S9 → **1)** "the speed maybe if the people hearing are from abroad. I mean, they are working in another no native language." / **2)** "It could have some distractions that helps to not focusing in the audio. I mean, is not easy to retake the text if you are focusing firstly just in the audio."

S10 → **1)** "You can only get the information once, so if you don´t get it at first shot you will really struggle to get something out of it." / **2)** "Usually it is easier to read a foreign language than listen to it and understand it. Reading should be easier if your English level is not very good."

S11 → **1)** "If you are not fluent in English it could be easier to prioritize the text."

S12 → **1)** "One has to be accustomed to listening and understanding different accents of the same language." / **2)** "If you did not manage to understand a phrase, you cannot rewind the audio, whereas with the text you can partly re-read the text if you are quick enough."
/ **3)** "If you are distracted for just a split second, you have missed picking-up that small piece of information, whereas with the text you can re-read if you are quick enough."

S13 → **1)** "sometimes it goes very fast and you can not understand what they are saying."

S14 → **1)** "The speed isn´t dictated by you." / **2)** "The tone and accent isn´t dictated by you." / **3)** "How much information you want to extract isn´t dictated by you."

S15 → **1)** "Have to be more concentrated to grasp all the details." / **2)** "More time consuming."

18. If you had to give advice to another future participant of the experiment, explain shortly positive reasons (maximum three) for this person to pick the textual information output:

S1 → **1)** "You don't miss anything." / **2)** "You concentrate more easily." / **3)** "You read at your own pace."

S2 → **1)** "You can understand better while reading if you didn´t hear the speaker." / **2)** "The information has a better overview." / **3)** "If you don´t understand the speaker or misunderstood him, you can receive the information correctly via the text."

S3 → **1)** "You get the information fast." / **2)** "You get it in your own reading speed."

S4 → **1)** "You will see the information written, and be sure of what is being told."

S5 → **1)** "See point 17. In short; it is easier to get the message right."

S6 → **1)** "It lets to get more specific information that you maybe will not remember when you are listening." / **2)** "This is the proper option when you have better reading skills than the listening ones (strongly recommended when the news are not presented in your mother tongue)."

S7 → **1)** "You can take time to read."

S8 → **1)** It's less information." / **2)** "You can read the information twice if you need it."

S9 → **1)** "Read slowly and take the words that you thing it could help you." / **2)** "Even if you think you don't understand the text try to do lecture not lineal."

S10 → **1)** "It will let or re-read it if you did not understand it at first lecture." / **2)** "Usually it is easier to understand text than audios in foreign languages."

S11 → **1)** "It is easier to comprehend the text." / **2)** "Less information, and therefore perhaps easier to get main points of the stories."

S12 → **1)** "The text was concise and easier to follow in case you´re rather slow." / **2)** "You avoid difficulties with trying to understand the different accents."

S13 → **1)** "it goes slower."

S14 → **1)** "Quicker to digest." / **2)** "You get to the point without the extra garbage around it." / **3)** "Lesser processing for the brain to do."

S15 → **1)** "Faster." / **2)** "Clearer message." / **3)** " Itcan take my time to read it, and still know the body of the news**."**

19. If you had to give advice to another future participant of the experiment, explain shortly disadvantages of choosing the textual information output (maximum three):

S1 → **1)** "You miss details." / **2)** "You are not getting impressions from the person hosting the program."

S2 → **1)** "It goes very fast." / **2)** "The order is broken, it is not the same as in the audio." / **3)** "Might be confusing to be reading while listening to something different."

S3 → **1)** "It is incoherent with the audio." / **2)** "It can be boring to read."

S4 → **1)** "The text may be going away to fast, or coming up too slow."

S5 → 1) "The text is changing, and with the audio message still going it is quite difficult to understand the text completely. It takes too much time to process the information in this experiment if you just follow the text in my opinion."

S6 → **1)** "It requires to be more concentrated trying not to miss any sentence."

S7 → **1)** "Reading can be boring if you do not like the topic."

S8 → **1)** "Maybe you don't take all the information." / **2)** "You need more concentration."

S9 → **1)** "Sometimes your vocabulary fail." / **2)** "Sometimes your ability to read is not at the same level that text."

S10 → **1)** "It can be very fast so if you don´t read it very quick you might miss some sentences."

S11 → **1)** "Lagging behind the audio." / **2)** "Easy to get distracted by the audio while concentrating on the text." / **3)** "Less personal than the audio."

S12 → **1)** "Not so many details in the text when compared to the audio."

S13 → **1)** "You lose some information because It seems they write less information than they are actually saying."

S14 → **1)** "The terrible buffering speed of the text in Exposure B". / **2)** "There were some irrelevant symbols that were breaking the information apart, giving it some discontinuity."

S15 → **1)** "I don't think there is an disadvantage. The message is still clearer and more objective than the audio, albeit shorter."

C. Experiment participation feedback:

20. The experiment was, in general, very simple and easy to understand: (Please, check one answer)

a) I strongly agree b) I agree c) Neither agree or disagree c) I disagree d) I strongly disagree

21. The location and the media given for the experiment are accurate and did not have negative influence on my participation: (Please, check one answer)

a) I strongly agree b) I agree c) Neither agree or disagree c) I disagree d) I strongly disagree

22. The instructions and the information given during the news reception phase were helpful and more than enough for me to follow: (Please, check one answer)

a) I strongly agree b) I agree c) Neither agree or disagree c) I disagree d) I strongly disagree

23. There was plenty of time to experience the news reception phase in my best conditions: (Please, check one answer)

a) I strongly agree b) I agree c) Neither agree or disagree c) I disagree d) I strongly disagree

24. The instructions and the information given during the questionnaire phase were helpful and more than enough for me to follow: (Please, check one answer)

a) I strongly agree b) I agree c) Neither agree or disagree c) I disagree d) I strongly disagree

25. The questions of the questionnaire were in general clear enough to be understood and answered without problems: (Please, check one answer)

a) I strongly agree b) I agree c) Neither agree or disagree c) I disagree d) I strongly disagree

Detailed coding process of the qualitative open questions:

Question #9 asked: *If you were very interested in a particular news story, what would you choose to do between these two options?* In order to answer to this question, the two options given were: to read about the news story or to listen to it on the radio. The former was picked by 14 respondents whereas the latter only by one person. After reading the answers, the first coding list of repeated ideas was:

1. Easier
2. I am used to read
3. Quicker
4. Stressful
5. Better understanding
6. I barely/rarely listen

These six repeated concepts were initially labeled into the categories: a) to read is easier; b) to read is quicker; c) I understand better when I read; d) I am used to read; e) to read is less stressful; and f) I occasionally listen to the radio. Next, the relevant data was assigned to the initial categories in the following way:

a) To read is easier: "you can come back to what you've read easier" – "It is easier to find information" – "It is easier for me to extract the main points" – "It is easier to find related information using the links that online newspapers provide" – "It is easier to read online" – "It is much easier to look up a particular news item online".
b) I am used to read: "I am used to be reading the news" – "I am used to read newspapers"
c) To read is quicker: "I find information quickly online" – "I want to find the interesting news as quick as possible" – "It is faster" – "I can read as fast as I want to" – "It is faster to look for up for a particular news item online" – "Quicker information reception to the brain".
d) To read is less stressful: "It is less stressful" – "I can dictate the speed of the reading material, which is not possible with audio" – "I can also read at my own pace".
e) I understand better when I read: "I get more information by reading" – "To read provides a deeper knowledge of the topic" – "When I read I understand better" – "I can go in deep and be sure what are they telling to me" – "It is richer to read" – "I understand better what the news are about" – "I like to know all the details of the news".
f) I occasionally listen to the radio: "I barely listen to the radio at all" – "I rarely tune in to radio stations".

After the first coding in this question, the recode process made some major changes in the categories. For instance, categories d) and f) were considered to express the same idea and consequently were integrated together under the name "More frequent reading habit". Something similar happened with categories a) and c) and e). Concepts such as "easier", "deeper knowledge", "understand better", "I want to know

all the details" or "less stressful" were interpreted to refer to the same topic and eventually labeled into a bigger more general category called "More and more comfortable information access". For instance, it was found that those who said that to read was easier were actually explaining it in terms of the comfort to access to more information items without time limit. This final category allowed including other ideas that were not matching especially good in the first coding such as "I feel more in control of what information I obtain". The final coding with the data across categories was:

A) More frequent reading habit: "I am used to be reading the news" – "I am used to read newspapers" – "I barely listen to the radio at all" – "I rarely tune in to radio stations".
B) Reading speed: "I find information quickly online" – "I want to find the interesting news as quick as possible" – "It is faster" – "I can read as fast as I want to" – "It is faster to look for up for a particular news item online" – "Quicker information reception to the brain".
C) More and more comfortable information access: "You can come back to what you've read easier" – "It is easier to find information" – "It is easier for me to extract the main points" – "It is easier to find related information using the links that online newspapers provide" – "It is easier to read online" – "It is much easier to look up a particular news item online". "It [to read] provides a deeper knowledge of the topic" – "When I read I understand better" – "I can go in deep and be sure what are they telling to me" – "It is richer to read" – "I understand better what the news are about" – "I like to know all the details of the news" – "It is less stressful" – "I can dictate the speed of the reading material, which is not possible with audio" – "I can also read at my own pace" – "I feel more in control of what information I obtain" – "I have more control with which parts of the story I want to know about"

Questions #10 and #11 asked about the attention given to dynamic pieces of text information when watching video and audio on a screen. The former stated: *Have you ever watched the news on TV or on the Internet and become distracted by upcoming headlines running in the lower part of the screen?* The latter inquired: *Have you ever watched a film in a foreign language with subtitles and eventually paid more attention to them than to the movie action?* Both questions had several pre-selected options and the most picked one in the two of them was: yes, sometimes (10 subjects answered to it in #10 and 13 respondents in #11). The initial coding list of terms was:

1. Interesting
2. More information
3. Better understanding
4. Difficulties
5. I am used to it
6. Helpful

The first coding was again done with these six preliminary concepts. The data material was distributed in the following way:

a) Interesting: “I find that info more interesting” – “I can choose to focus in the headlines if the news on the screen get boring” – “If the headlines were about something that interests me…” – “I’d rather read about the item that interests me”.
b) More information: “It gives more information per second” – “I get more information” – “I try to focus on both news to get more information”.
c) Better understanding: “I understand what they are speaking” – “Understand the speech” – “Get better understanding” – “There is no need to understand 100%”
d) Difficulties: “It is difficult to get information” – “Wherever there is a text it is difficult not to read it”.
e) I am used to it: “I am used to read, so I think that I am accustomed to do it” – “I tend to read” – “I have gotten used to it in time”.
f) Helpful: “It helps not to be totally distracted of the main news thread” – “It helps me to understand the speech” – “I find it helpful to know exactly”.

The recode process made again some changes to the preliminary categories. Thus, c) Better understanding, d) Difficulties and f) Helpful were reallocated together after reading the answers since it was understood that they were all referring to a bigger idea: clarity of the speech. Other concepts were connected with the previous labels too. For instance, the concept “districting” or “distractions” were included in clarity topic:

A) Interest preference: “I find that info more interesting” – “I can choose to focus in the headlines if the news on the screen get boring” – “If the headlines were about something that interests me…” – “I’d rather read about the item that interests me” – “I can pay attention” – “…Incoming news that I would like, or not, to follow” – “The news in the lower part of the screen is a more dynamic view” – “I either try to read it quick or ignore it a bit” – “If I am not interested I tend not to pay attention” – “…wasting my attention on something that I find somewhat irrelevant” – “I don’t like” – “It bothers me quite a lot”.
B) More information access: “I try to focus on both news to get more information” – “It gives more information per second” – “I get more information” – “Deep in terms of dialogues and meanings”.
C) Clarity need: “I understand what they are speaking” – “Understand the speech” – “Get better understanding” – “There is no need to understand 100%” – “It is difficult to get information” – “Wherever there is a text it is difficult not to read it” – “It helps not to be totally distracted of the main news thread” – “It helps me to understand the speech” – “I find it helpful to know exactly” – “I don’t think I often come across news online that do these distractions” – “subtitles give some context” – “Without that I would easily lose the plot” – “I can get distracted” – “I don’t find them distracting” – “it keeps you up-to-date easily” – “it depends on the difficulties” – I have difficulties understanding” – “I shift my attention to the subtitles in order to better understand what is being said” – “If I don’t read the subtitles I will not understand” – “It helps to understand the plot”

D) More frequent reading habit: “I am used to read, so I think that I am accustomed to do it” – “I tend to read” – “I have gotten used to it in time”.

Questions #13 and #14 were exclusively about the news reception experience of the subjects in exposure A and B respectively. They stated: *How was your experience during the news reception phase in the Exposure…?* They both had a set of pre-selected options that can be found before in this paper. The coding came up like this:

1. Speed
2. Understanding
3. Information
4. Distracting
5. Complementation
6. Easier
7. I prefer to
8. Focus

In this part of the analysis, it was found that the answers to these two questions produced more categories in the first coding, eight in total. This is how the relevant material was assigned to the categories:

a) Speed: “It was going so fast” – “The text was lagging behind the audio” – “It was going very fast” – “The speed of the text required to focus on reading” – “The speed at which they talked wasn’t at my level” – “The exposure was going slower” – “The text came later” – “I had no opportunity to read it carefully” – “The text was appearing slowly” – “Sometimes the text appeared late” – “The text was buffering at the speed of a tortoise” – “Extremely slow text speed” – “It wasn’t that fast” – “The slow running is the reason for not to focus on them”.

b) Understanding: “The audio was considered an extra help to try to understand the content” – “I tried to combine both to get better understanding of the information given” – “I did not understand the general meaning” – “It helped to enhance the understanding” – “The audio would give me a more complete understanding of the story” – “It was better to read the text in order to understand the news” – “When I didn’t understand I tried to read” – “To be understandable I need audio and text at the same time”.

c) Information: “The test gave me less information” – “I realized there were more details in the audio” – “I wanted to absorb as much information as possible” (twice) – “I was also reading the text in case I could get more information” – “not so many things in depth” – “I remember more information from just listening” – “There were more details in the audio” – “I missed the details” – “Audio was more complete” – “The texts were only useful to get some information that I didn’t get from the audio”.

d) Distracting: “The audio seemed to be distracting” – “It was not possible for me to not to be distracted by the audio messages” – “I could not take away the audio so easily” – “It was easier to get the info by listening”

e) Complementation: “The text and the audio were not matching all the time” – “The text was an ok support to have sometimes” – “The audio was considered an extra help to try to understand the content” – “I tried to combine both to get better understanding” – “The text was a complement for the audio message” – “It helped to enhance the understanding” – “I tried to

read but audio and text were not at the same time" – "Check the correspondence in the topics" – "Check the correspondence between the text and the audio" – "The text was a complement to the audio" – "The text reinforced the message being transmitted"

f) Easier: "I had some problems handling it both" – "Easier to understand the news anchor" - "I could not take away the audio so easily" – "It was much easier to just close my eyes" – "Exposure B was easier" – "I have made a bigger effort" – "I found it easier to read" – "The text was easier to follow"

g) I prefer to: "I wanted to read the running line" – "I was shifting my attention" – "I wanted to see if I could manage both audio and text" – "I felt more comfortable in this way" – "I have decided to read the text before" – "I prefer text" – "I wanted to read the text".

h) Focus: "The speed of the text required to focus on reading" – "I have needed two or three seconds to retake the text" – "I tried to focus in both" – "I felt I couldn't focus in the first task" – "The slow running is the reason for not to focus on the texts".

The recode process for questions #13 and #14 took longer time of analysis. Some of the concepts, as it can be seen already in the first coding, were matching several categories simultaneously. Afterwards, the topics were redistributed into new labels. For instance, it was found that the speed of the written or spoken speech conditioned where the subjects focus their attention to. Also, it was concluded that the distraction to one output or to another was that in fact made the experience more or less difficult to follow. Finally, the level of understanding was intrinsically identified with the complementation of both outputs to extract more information, whereas similarly the bigger information access made the subject prefer to go for one output or the other. The final coding ended in this way:

A) Speed of the speech: "It was going so fast" – "The text was lagging behind the audio" – "It was going very fast" – "The speed of the text required to focus on reading" – "The speed at which they talked wasn't at my level" – "The exposure was going slower" – "The text came later" – "I had no opportunity to read it carefully" – "The text was appearing slowly" – "Sometimes the text appeared late" – "The text was buffering at the speed of a tortoise" – "Extremely slow text speed" – "It wasn't that fast" – "The slow running is the reason for not to focus on them" – "The speed of the text required to focus on reading" – "I have needed two or three seconds to retake the text" – "I tried to focus in both" – "I felt I couldn't focus in the first task" – "The slow running is the reason for not to focus on the texts".

B) Preference for biggest possible information amount: "The test gave me less information" – "I realized there were more details in the audio" – "I wanted to absorb as much information as possible" (twice) – "I was also reading the text in case I could get more information" – "not so many things in depth" – "I remember more information from just listening" – "There were more details in the audio" – "I missed the details" – "Audio was more complete" – "The texts

were only useful to get some information that I didn't get from the audio" – "I wanted to read the running line" – "I was shifting my attention" – "I wanted to see if I could manage both audio and text" – "I felt more comfortable in this way" – "I have decided to read the text before" – "I prefer text" – "I wanted to read the text".

C) Noise difficulty / Distracting influences: "The audio seemed to be distracting" – "It was not possible for me to not to be distracted by the audio messages" – "I could not take away the audio so easily" – "It was easier to get the info by listening" – "I had some problems handling it both" – "Easier to understand the news anchor" - "I could not take away the audio so easily" – "It was much easier to just close my eyes" – "Exposure B was easier" – "I have made a bigger effort" – "I found it easier to read" – "The text was easier to follow"

D) Complementary messages for better comprehension: "The text and the audio were not matching all the time" – "The text was an ok support to have sometimes" – "The audio was considered an extra help to try to understand the content" – "I tried to combine both to get better understanding" – "The text was a complement for the audio message" – "It helped to enhance the understanding" – "I tried to read but audio and text were not at the same time" – "Check the correspondence in the topics" – "Check the correspondence between the text and the audio" – "The text was a complement to the audio" – "The text reinforced the message being transmitted" – "The audio was considered an extra help to try to understand the content" – "I tried to combine both to get better understanding of the information given" – "I did not understand the general meaning" – "It helped to enhance the understanding" – "The audio would give me a more complete understanding of the story" – "It was better to read the text in order to understand the news" – "When I didn't understand I tried to read" – "To be understandable I need audio and text at the same time".

Question #15 asked to the respondents: *If you could repeat the experiment, to which output would you like to focus your attention next time?* In this question there were three pre-selected options. In total, 10 people declared that they would focus in the radio, 4 people in the texts, and one person that would attempt to follow both of them. The results of the first coding:

1. Understanding 2. More information 3. Distracting 4. Complexity

Fewer categories were found for this question since the answers pretty much agreed on the same concepts. The data was labeled in the following way:

a) Understanding: "If I first have to read it, I understand it and process it to information" – "I could manage to understand much more hearing than reading" – "I think I could understand the news better reading"

b) More information: "The text is very basic and will not provide any link to other information I would be interested to check" – "Language level enough to comprehend" – "To focus on the audio would give me more information" – "There was far more information in the audio"

c) Distracting: “Focusing to the radio I will not get distracted with the extra text coming up” – “I feel like the text distracted me on the first turn” – “The listening part is more challenging for me”

d) Complexity: “The text is very basic” – “The message was more complex in the audio” – “The text is easier, less information, more specific” – “The text was giving me the exact information I wanted to hear”

Again, the recoding connected together the meaning of more information and better understanding. The label “complexity” helped to understand that the information given by the text was in general more accurate for the respondents:

A) More information Access: “The text is very basic and will not provide any link to other information I would be interested to check” – “Language level enough to comprehend” – “To focus on the audio would give me more information” – “There was far more information in the audio” – “If I first have to read it, I understand it and process it to information” – “I could manage to understand much more hearing than reading” – “I think I could understand the news better reading”

B) Distracting: “Focusing to the radio I will not get distracted with the extra text coming up” – “I feel like the text distracted me on the first turn” – “The listening part is more challenging for me”

C) Complexity / Preciseness: “The text is very basic” – “The message was more complex in the audio” – “The text is easier, less information, more specific” – “The text was giving me the exact information I wanted to hear”

Finally, questions #16, #17, #18, and #19 asked the subjects to give advice about the advantages and disadvantages of the news radio broadcasting and the news texting reporting. They were all formulated under this model: “*If you had to give advice to another future participant of the experiment, explain shortly a maximum of three positive reasons / disadvantages for this person to pick the audio information output /choosing the audio information output*”. These four questions were analyzed together because they were looking for similar ideas and the redundancy was desired. The first coding contained 10 categories:

1. Direct quick messaging
2. Relaxing news feed
3. Focused attention
4. Language level
5. Human interaction
6. All the information
7. Fugacity of the message
8. Time consuming
9. Coherence
10. Boring

Then, the data material was classified in the different initial categories according to the following list of preliminary topics:

a) Direct quick messaging: “Audio is direct” – “The information is given quickly on the audio” – “The audio is faster” – “The information is more direct in the audio” – “I found the delivery of information through the text as somewhat slow” – “The speech on the audio goes very fast” – “The audio was overwhelming” – “The audio may be a bit fast” – “With the text it may take more time to process the information” – “The audio is faster and you cannot get the topic” – “The audio goes so quickly” – “The speed of the audio maybe if the people hearing are from abroad. I mean, they are working in another no native language” – “Sometimes the audio goes very fast and you cannot understand what they are saying” – “You get the information fast” – “Read slow” – “The text was concise and easier to follow in case you´re rather slow” – “The text goes slower” – “The text is quicker to digest” – “You get to the point without the extra garbage around it with the text” – “The text goes faster” – “The text goes very fast” – “The message is still clearer and more objective than the audio”.

b) Relaxing news feed: “The information comes to you without effort with the audio” – “Audio is relaxing” – “The text requires more work” – “It is easier to understand a verbal message” – “The audio is a more relaxing way to be informed” – “If you understand English, you don’t make a big effort” – “It is easier to follow the audio, since it is more fluent and easy to understand” – “If you are doing something that requires your attention, the audio will give you the information without you having to look at the screen” – “I can concentrate in physical chores while listening to it” – “The audio is more stressful” – “You can do more things while you are listening” –“You read at your own pace” – “It is easier to comprehend the text” – “lecture is lesser processing for the brain to do”

c) Focused attention: “You will be more focused by listening to the audio” – “You will not get confused if you focus to the audio” – “Focus in the audio” – “Listening to the audio you may get distracted by your own thoughts” – “The audio can be distracting (the way they talk) – “You can start reading something and be distracted by the audio” – “It could have some distractions that helps to not focusing in the audio. I mean, is not easy to retake the text if you are focusing firstly just in the audio” – “Have to be more concentrated to grasp all the details” – “You concentrate more easily when reading” – “It might be confusing to be reading while listening to something different” – “The text requires to be more concentrated trying not to miss any sentence” – “You need more concentration with the text” – “Easy to get distracted by the audio while concentrating on the text”

d) Language level: “If you understand English, you don’t make a big effort” – “If you don’t understand after a few seconds, try to read” – “If you don´t understand the speaker´s accent, you won´t understand the meaning of the information” – “If you miss a sentence or do not understand the pronunciation you are doomed if you only focus on the audio. With the text it is easier to know exactly what the person is trying to tell you” – “It is necessary a good level of the language not to get lost of the topic and miss important details” – “The speed of the audio maybe if the people hearing are from abroad. I mean, they are working in another no native language” – “Usually it is easier to read a foreign language than listen to it and understand it. Reading should be easier if your English level is not very good” – “If you are

not fluent in English it could be easier to prioritize the text" – "One has to be accustomed to understand different accents of the same language" – "You can understand better while reading if you didn´t hear the speaker" – "If you don´t understand the speaker or misunderstood him, you can receive the information correctly via the text" – "The text is strongly recommended when the news are not presented in your mother tongue" – "Usually it is easier to understand text than audios in foreign languages" – "With the text you avoid difficulties with trying to understand the different accents"

e) Human interaction: "The audio is live and more rewarding" – "The voice of the speaker is nice" – "Audio is real" – "We as human beings have communicated much longer through verbal messages" – "The audio is more active" – "The audio is close, sometimes letters are colder than the voice" – "The audio is more personal" – "I found listening to the US accent (1st recording), and the kiwi and probably British accents in the second recording quite interesting" – The audio is richer (complete) and it is an advantage the human interaction" – "The tone and accent are not dictated by you with the audio" – "You are not getting impressions from the person hosting the program with the text" – "The text is less personal than the audio"

f) All the information: "You get the whole info with the audio" – "You can get more details from the speed or tone" – "You will get more out of listening to the audio" – "With the audio you can get the picture of the news even though you miss a part of it" – "The audio gives more information" – "There is more information in the audio" – "The audio gives more information" – "With the audio you may lose details" – "In the audio there is a lot of information told, so it can be hard to get all the details" – "It is easier to forget if you only listen" – "How much information you want to extract with the audio isn´t dictated by you" – "You don't miss anything with the text" – "You will see the information written, and be sure of what is being told" – "It is easier to get the message right with the texts" – "The text allows you to get more specific information that you maybe will not remember when you are listening" – "It is less information when you read" – "It is easier to comprehend the text" – "Less information, and therefore perhaps easier to get main points of the stories with the text" – "The text has a clearer message" – "You miss details with the text" – "Maybe you don't take all the information with the text" – "Not so many details in the text when compared to the audio" – "You lose some information with the audio because it seems they write less information than they are actually saying"

g) Fugacity of the message: "It is easier to forget if you only listen" – "You can only get the information once, so if you don´t get it at first shot you will really struggle to get something out of it" – "If you did not manage to understand a phrase, you cannot rewind the audio, whereas with the text you can partly re-read the text if you are quick enough" – "The speed is not dictated by you" –"You read at your own pace" – "You get it in your own reading speed" – "You will see the information written, and be sure of what is being told" – "You can take time to read" – "you can read the information twice if you needed" – "The text will let or re-read it if you did not understand it at first lecture" – "The text requires to be more

concentrated trying not to miss any sentence" – "The text can be very fast so if you don´t read it very quick you might miss some sentences"

h) Time consuming: "The audio is more time consuming" – "You read at your own pace" – "You get it in your own reading speed" – "You can take time to read" – "Read slow" – "The text goes slower" – "the text can take my time to read it, and still know the body of the news" – "It takes too much time to process the information in this experiment if you just follow the text"

i) Coherence: "The order with the text is broken, it is not the same as in the audio" – "The text is incoherent with the audio" – "The text may be going away to fast, or coming up too slow" – "The text is changing, and with the audio message still going it is quite difficult to understand the text completely" – "Sometimes your vocabulary fails when reading" – "Sometimes your ability to read is not at the same level that text" – "The text was lagging behind the audio" – "There was a terrible buffering speed of the text in Exposure B" – "There were some irrelevant symbols that were breaking the information apart, giving it some discontinuity"

j) Boring: "It can be boring to read" – "Reading can be boring if you do not like the topic"

After the re-coding, some ideas were integrated together to result in the final categories of this analysis. For instance, it was understood that the reading was boring in terms of less human interaction. Similarly, the subjects talked about relaxing or stressing effects when describing the effort to focus on a certain output, so these two ideas were also linked together. The same occurred with the time-consuming interpretations and the more direct and quick news messaging opinions regarding the speed of the speech. The final coding was:

A) Time to get the right information: "Audio is direct" – "The information is given quickly on the audio" – "The audio is faster" – "The information is more direct in the audio" – "I found the delivery of information through the text as somewhat slow" – "The speech on the audio goes very fast" – "The audio was overwhelming" – "The audio may be a bit fast" – "With the text it may take more time to process the information" – "The audio is faster and you cannot get the topic" – "The audio goes so quickly" – "The speed of the audio maybe if the people hearing are from abroad. I mean, they are working in another no native language" – "Sometimes the audio goes very fast and you cannot understand what they are saying" – "You get the information fast" – "Read slow" – "The text was concise and easier to follow in case you´re rather slow" – "The text goes slower" – "The text is quicker to digest" – "You get to the point without the extra garbage around it with the text" – "The text goes faster" – "The text goes very fast" – "The message is still clearer and more objective than the audio" – "The audio is more time consuming" – "You read at your own pace" – "You get it in your own reading speed" – "You can take time to read" – "Read slow" – "The text goes slower" – "the text can take my time to read it, and still know the body of the news" – "It takes too much time to process the information in this experiment if you just follow the text".

B) Comfort to get new information: “The information comes to you without effort with the audio” – “Audio is relaxing” – “The text requires more work” – “It is easier to understand a verbal message” – “The audio is a more relaxing way to be informed” – “If you understand English, you don’t make a big effort” – “It is easier to follow the audio, since it is more fluent and easy to understand” – “If you are doing something that requires your attention, the audio will give you the information without you having to look at the screen” – “I can concentrate in physical chores while listening to it” – “The audio is more stressful” – “You can do more things while you are listening” –“You read at your own pace” – “It is easier to comprehend the text” – “lecture is lesser processing for the brain to do” – “You will be more focused by listening to the audio” – “You will not get confused if you focus to the audio” – “Focus in the audio” – “Listening to the audio you may get distracted by your own thoughts” – “The audio can be distracting (the way they talk) – “You can start reading something and be distracted by the audio” – “It could have some distractions that helps to not focusing in the audio. I mean, is not easy to retake the text if you are focusing firstly just in the audio” – “Have to be more concentrated to grasp all the details” – “You concentrate more easily when reading” – “It might be confusing to be reading while listening to something different” – “The text requires to be more concentrated trying not to miss any sentence” – “You need more concentration with the text” – “Easy to get distracted by the audio while concentrating on the text”

C) Language level difficulties: “If you understand English, you don’t make a big effort” – “If you don’t understand after a few seconds, try to read” – “If you don´t understand the speaker´s accent, you won´t understand the meaning of the information” – “If you miss a sentence or do not understand the pronunciation you are doomed if you only focus on the audio. With the text it is easier to know exactly what the person is trying to tell you” – “It is necessary a good level of the language not to get lost of the topic and miss important details” – “The speed of the audio maybe if the people hearing are from abroad. I mean, they are working in another no native language” – “Usually it is easier to read a foreign language than listen to it and understand it. Reading should be easier if your English level is not very good” – “If you are not fluent in English it could be easier to prioritize the text” – “One has to be accustomed to understand different accents of the same language” – “You can understand better while reading if you didn´t hear the speaker” – “If you don´t understand the speaker or misunderstood him, you can receive the information correctly via the text” – “The text is strongly recommended when the news are not presented in your mother tongue” – “Usually it is easier to understand text than audios in foreign languages” – “With the text you avoid difficulties with trying to understand the different accents”

D) Human interaction: “The audio is live and more rewarding” – “The voice of the speaker is nice” – “Audio is real” – “We as human beings have communicated much longer through verbal messages” – “The audio is more active” – “The audio is close, sometimes letters are colder than the voice” – “The audio is more personal” – “I found listening to the US accent (1st recording), and the kiwi and probably British accents in the second recording quite

interesting" – The audio is richer (complete) and it is an advantage the human interaction" – "The tone and accent are not dictated by you with the audio" – "You are not getting impressions from the person hosting the program with the text" – "The text is less personal than the audio" – "It can be boring to read" – "Reading can be boring if you do not like the topic"

E) Possibilities to get deeper information: "You get the whole info with the audio" – "You can get more details from the speed or tone" – "You will get more out of listening to the audio" – "With the audio you can get the picture of the news even though you miss a part of it" – "The audio gives more information" – "There is more information in the audio" – "The audio gives more information" – "With the audio you may lose details" – "In the audio there is a lot of information told, so it can be hard to get all the details" – "It is easier to forget if you only listen" – "How much information you want to extract with the audio isn´t dictated by you" – "You don't miss anything with the text" – "You will see the information written, and be sure of what is being told" – "It is easier to get the message right with the texts" – "The text allows you to get more specific information that you maybe will not remember when you are listening" – "It is less information when you read" – "It is easier to comprehend the text" – "Less information, and therefore perhaps easier to get main points of the stories with the text" – "The text has a clearer message" – "You miss details with the text" – "Maybe you don't take all the information with the text" – "Not so many details in the text when compared to the audio" – "You lose some information with the audio because it seems they write less information than they are actually saying"

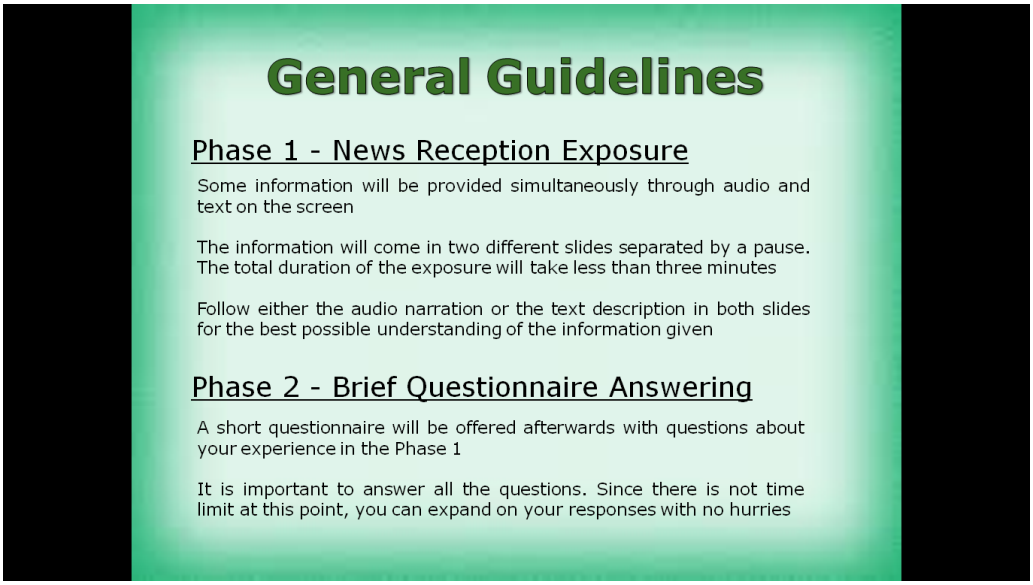
F) Fugacity of the message: "It is easier to forget if you only listen" – "You can only get the information once, so if you don´t get it at first shot you will really struggle to get something out of it" – "If you did not manage to understand a phrase, you cannot rewind the audio, whereas with the text you can partly re-read the text if you are quick enough" – "The speed is not dictated by you" –"You read at your own pace" – "You get it in your own reading speed" – "You will see the information written, and be sure of what is being told" – "You can take time to read" – "you can read the information twice if you needed" – "The text will let or re-read it if you did not understand it at first lecture" – "The text requires to be more concentrated trying not to miss any sentence" – "The text can be very fast so if you don´t read it very quick you might miss some sentences"

G) Coherence between audio and text running simultaneously: "The text was lagging behind audio slightly and that was a bit frustrating" – "The order with the text is broken, it is not the same as in the audio" – "The text is incoherent with the audio" – "The text may be going away to fast, or coming up too slow" – "The text is changing, and with the audio message still going it is quite difficult to understand the text completely" – "Sometimes your vocabulary fails when reading" – "Sometimes your ability to read is not at the same level that text" – "The text was lagging behind the audio" – "There was a terrible buffering speed of the text in Exposure B" – "There were some irrelevant symbols that were breaking the information apart, giving it some discontinuity"

Screenshots of the prototype functioning:

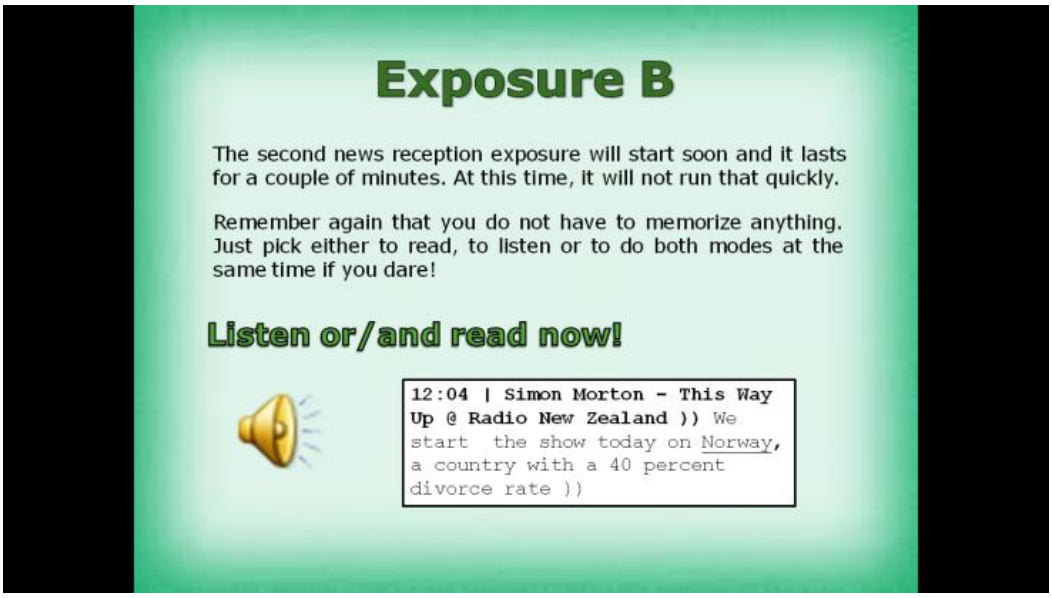
First presentation slide:

Instructions slide:

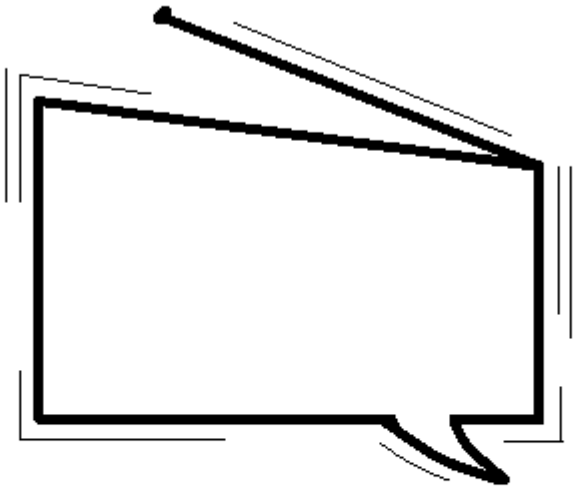


Exposure A slide:

Exposure B slide:



Conceptual logo of the e-radio:



PROJECT

e-radio

Designed by Manuel Bernardo © 2014